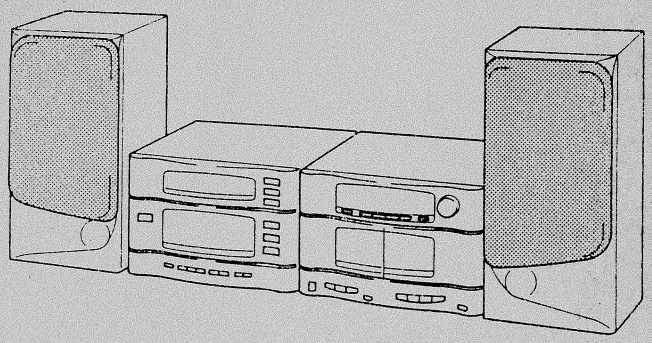
HITACHI

SERVICE MANUAL

YS	No. 0013EF

AX12
AXC12
AX15
AXC15
[UC,E,EBS,EZ,W,WUN, WAU]



AX12	AX15
HAD-12	HAD-15
HTC-15	HTC-15
HS-AX12	HS-AX15
AXC12	**AXC15**
HAD-12	HAD-15
HTC-C15	HTC-C15
HS-AX12	HS-AX15

CAUTION
DANGER
Invisible laser radiation when open and interlocks failed or defeated. AVOID DIRECT EXPOSURE TO BEAM.

GEFAHR
Unsichtbare Laser-Strahlung wenn Interlock (Blockierung) funktionsuntüchtig oder abgeschaltet.
UNMITTELBAREN KONTAKT MIT DEM STRAHL UNBEDIGT VERMEIDEN.

DANGER
Faire très attention aux radiations émises par le faisceau laser invisible au défaillance du verrouillage.
NE JAMAIS S'EXPOSER DIRECTEMENT AU FAISCEAU.

VARNING
När apparaten öppnats och skyddsanordningen felar eller satts ur funktion förekommer osynlig laserstrålning. UNDVIK DIREKTE BESTRÅLING.

ADVARSEL
Når apparatet åbnes og beskyttelsesanordningen ikke virker eller sættes un af funktion, forekommer der usynlig laserstråling. UNDGÅ DIREKTE BESTRÅLING.

ADVARSEL
Når denne delen er apen som følge av at låsen er utkoplet eller ikke fungerer, eksisterer det usynlig laserstråling. UNNGÅ Å BLI UTSATT FOR DIREKTE BESTRÅLING!

VARIOITS
Laite lähettää näkymätöntä lasersäteilyä, kun se avataan ja kun sisäiset turvalukot eivät toimi.
VARO JOUTUMASTA ALTTIIKSI SÄTEILYLLE.

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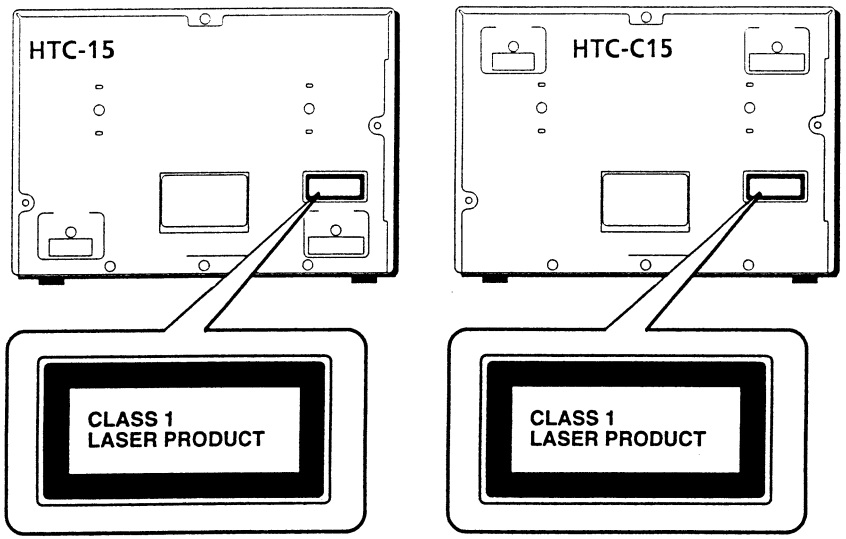
SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

COMPACT DISC STEREO SYSTEM

September 1993 Consumer Electronics Division

• The caution labels on laser usage • Notices de précautions d'emploi du laser



Inside of the set is a laser component emitting a laser radiation over the limit for laser class 1.

In dem Gerät befindet sich eine Laser-Komponente, die eine Laserstrahlung über dem Grenzwert für LaserOKlasse 1 ausstrahlt.

A l'intérieur de l'appareil se trouve un composant à rayonnement laser soumis aux normes de limitation laser de classe 1.

All'interno dell'unità è presente un componente al laser che emette radiazioni al di sopra del limite per i laser di classe 1.

Binnen in dit apparaat bevindt zich een laseronderdeel dat laserstraalen boven de limiet voor laser klasse 1 uitzendt.

Dentro del aparato hay un elemento de láser que emite radiación láser por encima del limite para la clase 1.

Inuti apparaten finns en laserkomponent som avger laserstrålning över gränsen för laser klass 1.

Indeni apparatet findes en laserkomponent, der giver en laserbestråling, der ligger over grænsen for laser klasse 1.

Dentro do aparelho há um componente laser que emite radiação laser superior ao limite para a classe Laser 1.

ADVARSEL

Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion.
Se ikke ind i strålen-heller ikke med optiske instrumenter.

ADVARSEL

Usynlig laserstråling når deksel åpnes og sikkerhedslås brytes.
Stirr ikke inn i strålen eller se direkte med optiske instrumenter.

VARO!

Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle laser-säteilylle.
Älä tuijota säteeseen äläkä katso sitä optisen laitteen läpi.

VARNING

Osynlig laserstrålning när denna del är öppnad och spärren är urkopplad.
Stirra ej in i strålen och betrakta ej strålen genom optiskt instrument.

AX12
AXC12
AX15
AXC15

SAFETY PRECAUTION

The following precautions should be observed when servicing.

1. Since many parts in the unit have special safety-related characteristics, always use genuine Hitachi's replacement parts. Especially critical parts in the power circuit block should not be replaced with other makers.Critical parts are marked with ⚠ in the circuit diagram and printed wiring board.
2. Before returning a repaired unit to the customer, the service technician must thoroughly test the unit to ascertain that it is completely safe to operate without danger of electrical shock.

SPECIFICATIONS

HAD-12/HAD-15

· TUNER SECTION

Circuit system: FM/AM 2 bands [for UC]
FM/MW/LW 3 bands [for E,EBS,EZ]
FM/SW/MW 3 bands
[for W,WUN,WAU]

Tuning range: **UC**
FM: 87.9 to 107.9MHz (200KHz step)
AM: 530 to 1,710KHz (10KHz step)
E,E(BS),E(Z)
FM: 87.5 to 108.0MHz (50KHz step)
MW:522 to 1,611KHz (9KHz step)
LW: 153 to 281KHz (1KHz step)
W,W(UN),W(AU)
MW Spacing : 9KHz
FM 87.5 to 108MHz (50KHz step)
MW 522 to 1,611KHz (9KHz step)
SW 3.8 to 12.5 MHz (5KHz step)
MW Spacing : 10KHz
FM 87.9 to 107.9MHz (200KHz step)
AM 530 to 1,710KHz (10KHz step)

IEC Sensitivity: FM: 1.5μV/75ohms (S/N30dB) [for UC]
FM: 1.5μV/75ohms (S/N26dB)
[except UC]
AM: 600μV/m
(S/N20dB,loop antenna) [for UC]
MW:1,400μV/m
(S/N26dB,loop antenna)
[for E,EBS,EZS]
MW:600μV/m
(S/N20dB,loop antenna)
[for W,WUN,WAU]
LW: 2,500μV/m
(S/N26dB,loop antenna)
[for E,EBS,EZS]
SW: 400μV (S/N20dB)
[for W,WUN,WAU]

Station presets: FM 12,AM 12 [for UC]
FM 12,MW 12,LW 12
[for E,EBS,EZS]
FM 12,MW 12,SW 12
[for W,WUN,WAU]

· TAPE DECK SECTION

Track system: 4 tracks,2 channels
Recording system: AC bias
Erasing system: AC erase

Tape: Tape 1: Playback
Tape 2: Recording/Playback
Normal/CrO_2/Metal
(playback only)
Tape speed: 4.75cm/s
Frequency response: CrO_2: 40 to 16,000Hz
S/N ratio: 63dB (dolby-on, IHF-A, 3%THD)

· AMPLIFIER SECTION

Input sensitivity/
impedance: AUX: 270mV/47Kohms
Output impedance: External speaker terminals
Suitable impedance:
6 to 16 ohms
Headphones
Suitable impedance:
8 to 100 ohms
Audio output: HAD-12: 20W + 20W
(6 ohms,T.H.D. 0.9%)
HAD-15: 35W + 35W
(6 ohms,T.H.D. 0.9%)

· Timer Section

System: Digital quartz clock
Display format: 12-hour cycle
[for UC,W,WUN,WAU]
24-hour cycle
[except UC,W,WUN,WAU]
Timer accuracy: Within 60 second at monthly rate

· General Specification

		UC	E,EZ	EBS	W,WUN,WAU
HAD -12	Power supply	AC 120V 60Hz	AC 230V	AC 240V 50Hz	AC110-120,200-220 230-240V,50/60Hz
	Power consumption	65W	55W	55W	55W
HAD -15	Power supply	AC 120V 60Hz	AC 230V	AC 240V 50Hz	AC110-120,200-220 230-240V,50/60Hz
	Power consumption	70W	65W	65W	65W

Dimensions: HAD-12:
225 x 170 x 324mm
HAD-15:
225 x 170 x 350mm
Weight: HAD-12: 5.2kg
HAD-15: 6.0kg

HTC-15/HTC-C15

CD cangerr:	Magazine (6) + 1 [for HTC-C15]
Frequency response:	10 to 20,000KHz
Number of channels:	2
Disc:	HTC-15: 12/8cm HTC-C15: 12cm (8cm : tray only)
Pickup:	Semiconductor laser
Memory:	HTC-15 : 20 HTC-C15 : 16
Dimensions:	HTC-15: 225 W × 170 H × 309 D mm HTC-C15: 225 W × 170 H × 309 D mm
Weight:	HTC-15: 2.6kg HTC-C15: 3.9kg

HS-AX12

System:	2-way speaker system, bass reflex
Speakers:	14cm × 1, 5cm × 1
Impedance:	6 ohms
Maximu input power:	35W (musical peak signal)
Dimensions:	170 W × 340 H × 204 D mm
Weight:	5.8kg (pair)

HS-AX15

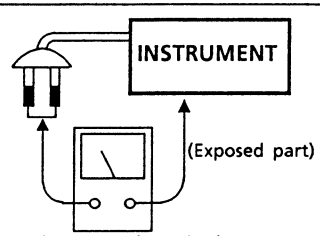
System:	3-way speaker system, bass reflex
Speakers:	14cm × 1, 5cm × 1, 2cm × 1
Impedance:	6 ohms
Maximu input power:	50W (musical peak signal)
Dimensions:	170 W × 340 H × 204 D mm
Weight:	6.0kg (pair)

ACCESSORIES

AM loop antenna:	1
FM dipole antenna:	1 [for UC, WAU]
System connector cable (7P):	1
System connector cable (13P):	1
Speaker wire:	2 (HS-AX15)
Remote control unit:	AX-12,AX-15: RB-AX15 (36key) AX-C12,AX-C15: RB-AXC15(38key)

Check that exposed parts are acceptably insulated from the supply circuit before returning the instrument repaired to the customer.

- **Checking method**
  Power (Operate) switch is set to ON.
  Next, measure the resistance value between the both poles of attachment cup (Power supply plug) and the CD OUT terminal of rear plate and check that the resistance value is 500 kohms or more.



Insulation tester (DC 500V)

AX12
AXC12
AX15
AXC15

PRÉCAUTIONS DE SÉCURITÉ

Les précautions suivantes doivent être observées chaque fois qu'une réparation doit être faite.

1. Etant donné que de nombreux composants de l'appareil possèdent des caractéristiques relatives à la sécurité, utiliser uniquement des pièces de rechange d'origine Hitachi pour effectuer un remplacement. Ceci se rapporte notamment aux pièces critiques du bloc d'alimentation qui ne doivent en aucun cas être remplacées par celles d'autres fabricants. Les pièces critiques sont accompagnés du symbole ⚠ dans le plan de circuit et sur le plan de base.
2. Avant de retourner l'appareil répare au client le technicien doit procéder à un essai complet pour s'assurer qu'il ne présente aucun danger de chocs électriques.

CARACTÉRISTIQUES TECHNIQUES

HAD-12/HAD-15

·SECTION SYNTONISEUR

système de Circuit: FM/AM 2 bands [pour UC]
FM/MW/LW 3 bands
[pour E,EBS,EZ]
FM/SW/MW 3 bands
[pour W,WUN,WAU]

Gemme d'accord:
UC
FM: 87.9 to 107.9MHz
(Régle sur 200KHz)
AM: 530 to 1,710KHz
(Régle sur 10KHz)
E,EBS,EZ
FM: 87.5 to 108.0MHz
(Régle sur 50KHz)
MW: 522 to 1,611KHz
(Régle sur 9KHz)
GO: 153 to 281KHz
(Régle sur 1KHz)
W,WUN,WAU
MW Spacing : 9KHz
FM 87.5 to 108MHz
(Régle sur 50KHz)
MW 522 to 1,611KHz
(Régle sur 9KHz)
OC 3.8 to 12.5 MHz (Régle sur 5KHz)
MW Spacing : 10KHz
FM 87.9 to 107.9MHz
(Régle sur 200KHz)
AM 530 to 1,710KHz
(Régle sur 10KHz)

Sensibilité IEC:
FM: 1.5µV/75ohms (S/N30dB) [pour UC]
FM: 1.5µV/75ohms (S/N26dB) [sauf UC]
AM: 600µV/m (S/N20dB,antenne en cadre) [pour UC]
MW: 1,400µV/m (S/N26dB,antenne en cadre) [pour E,EBS,EZS]
MW: 600µV/m (S/N20dB,antenne en cadre) [pour W,WUN,WAU]
GO: 2,500µV/m (S/N26dB,antenne en cadre) [pour E,EBS,EZS]
OC: 400µV (S/N20dB) [for W,WUN,WAU]

Station presets: FM 12,AM 12 [for UC]
FM 12,MW 12,LW 12 [pour E,EBS,EZS]
FM 12,MW 12,SW 12 [pour W,WUN,WAU]

· SECTION PLATINE MAGNÉTOPHONE

système de pistes:	4 pistes, 2 canaux stéréo
système d'enregistrement:	Polarisation à courant alternatif
Système d'effacement:	Effacement à courant alternatif
Bande:	Tape 1: Pour la lecture Tape 2: Pour l'enregistrement/ la lecture Normal/CrO_2/Métal (Uniquement lecture)
Vtesse de défilement de bands magnétique:	4.75cm/s
Réponse en fréquence:	CrO_2: 40 to 16,000Hz
Rapport signal-sur-bruit:	63dB (dolby en service,IHF-A, 3 % d.h.t.)

· SECTION AMPLIFICATEUR

Snsibilité d'entrée/ impédance:	AUX: 270mV/47Kohms
Inpédance de sortie:	Bornes de haut-parleur extérieur impédance appropriée: 6 à 16 ohms impédance appropriée de casque d'écoute: 8 à 100 ohms
Sortie audio:	HAD-12: 20W + 20W (6 ohms,T.H.D. 0.9%) HAD-15: 35W + 35W (6 ohms,T.H.D. 0.9%)

· SECTION MINUTERIE

Alimentation: Horloge à quartz numérique
Format d'affichage: 12-hour cycle
[pour UC,W,WUN,WAU]
24-hour cycle
[sauf UC,W,WUN,WAU]
Précision de la minuterie: Within 60 second at monthly rate·

· CARACTÉRISTIQUES GÉNÉRALES

		UC	E,EZ	EBS	W,WUN,WAU
HAD-12	Alimentation	Secteur alternatif 120V 60Hz	Secteur alternatif 230V	Secteur alternatif 240V 50Hz	Secteur alternatif 110-120,200-220 230-240V,50/60Hz
	Puissance consommée	65W	55W	55W	55W
HAD-15	Alimentation	Secteur alternatif 120V 60Hz	Secteur alternatif 230V	Secteur alternatif 240V 50Hz	Secteur alternatif 110-120,200-220 230-240V,50/60Hz
	Puissance consommée	70W	65W	65W	65W

Encombrement: HAD-12:
225 x 170 x 324mm
HAD-15:
225 x 170 x 350mm
Poids: HAD-12: 5.2kg
HAD-15: 6.0kg

HTC-15/HTC-C15

Capacité CD: Magasin (6) + 1 [for HTC-C15]
Réponse en fréquence: 10 to 20,000KHz
Norble de canaux: 2
Disque: HTC-15: 12/8cm
HTC-C15: 12cm
(8 cm: uniquement piste)
Analyseur: Laser à semiconducteur
Longueur d'onde: 785 nm
Sortie laser: Moins de 175µW (IEC pub. 825)
Moins de 48,5µW (FDA CFR21)
Mémoire: HTC-15 : 20
HTC-C15 : 16
Encombrement: HTC-15:
225 L x 170 H x 309 P mm
HTC-C15:
225 L x 170 H x 309 P mm
Poids: HTC-15: 2.6kg
HTC-C15: 3.9kg

HS-AX12

Systéme: Systéme de haut-parleur à 2boies, bass-reflex
Haut-parleurs: 14cm x 1, 5cm x 1
Impédance: 6 ohms
Puissance d'entrée maximum: 35W
(signal de crête musical)
Poids: 170 L x 340 H x 204 P mm
Poids: 5.8kg (pair)

HS-AX15

Systéme: Systéme de haut-parleur à 3boies, bass-reflex
Haut-parleurs: 14cm x 1, 5cm x 1, 2cm x 1
Impédance: 6 ohms
maximum: 50W (musical peak signal)
Encombrement: 170 L x 340 H x 204 P mm
Poids: 6.0kg (pair)

ACCESSOIRES

Antenne en cadre AM: 1
Antenne dipôle: 1 [pour UC, WAU]
Câble de raccordement de système(7 broches): 1
Câble de raccordement de système (13 broches): 1
Fil de haut-parleur: 2 (HS-AX15)
Boîtier de télécommande: AX-12,AX-15:
RB-AX15 (36touches)
AX-C12,AX-C15:
RB-AXC15(38touches)

AX12
AXC12
AX15
AXC15

SERVICE POINTS

HAD-12/15

1. Removal of the top cover (Fig. 1)
   (1) Remove 7 screws ①.

2. Removal of the front panel (Figs. 2 and 3)
   (1) After removing the top cover, remove 2 screws ② and 3 screws ③.
   (2) Remove VR knobs, nuts and washers.
   (3) Remove 9 connectors on the AUDIO P.W.B., 1 connector on the flexible P.W.B. and 2 connector on the MAIN P.W.B.
   (4) Press the Eject button to open the cassette door.
   Release the hooks (2 hooks at both left and right) from the claws and pull out the front panel towards the front.

3. Removal of the AUDIO P.W.B. (Figs. 2 and 4)
   (1) Remove VR knobs and washers. (Fig. 2)
   (2) After removing the top cover, remove screws ④ (8 screws for E, E (BS) and E (Z), 7 screws for UC, W, W (UN) and W (AU)) and 4 screws ⑤.
   (3) Disconnect 8 connectors on the AUDIO P.W.B. and 2 connectors on the flexible P.W.B.
   (4) Remove 3 screws ⑥.[Except E(Z)]
   Remove 4 screws ⑥.[For E]

4. Removal of the MAIN P.W.B. (Fig. 5)
   (1) After removing the AUDIO P.W.B., disconnect 2 connectors on the MAIN P.W.B. and release 8 soldered section.
   (2) Remove 5 screws ⑦ on the MAIN P.W.B.

5. Removal of the spectrum analyzer P.W.B. (Fig. 6)
   (1) After removing the front panel.

6. Removal of the cassette Mechanism chassis (Fig. 6 and Fig. 7)
   (1) After removing the front panel.
   (2) Remove 8 screws ⑨, Ⓐ, and then remove the cassette mechanism chassis from the front panel. (Use the shorter 3 x 8 BT screws. If the 3 x 10 screws are used, a hole is made in the front panel, causing a faulty appearance.)
   (3) Cautions when installing the deck mechanism (Fig. 7)
   - Set so that the eject lever is placed on the eject cam.
   - Check that the eject lever is pushed up by the eject cam when the eject button is pressed.

[Caution]
When installing the cassette deck, make sure that the eject cam is located under the eject lever.
If the cassette deck is installed with the eject button pressed, the eject arm and eject lever are caught each other and the deck does not operate. Lift the front panel slightly and install the cassette deck without pressing the eject button. (Fig. 7)

7. Removal of the cassette door (Fig. 8)
   (1) Remove the top cover, front panel and eject spring.
   (2) Insert a small screwdriver through the hole at the side of the front panel and release the pivot on one side, then release the other pivot and remove the cassette door.

8. Removal of the DECK O.P. P.W.B. (Fig. 9)
   (1) Remove the front panel and the deck mechanism.
   (2) Remove 2 screws ⑩ and remove the deck mechanism holder and DECK O.P. P.W.B.
   (3) Be sure that the eject cam is in the correct position when installing the deck mechanism holder.

9. Installing the cassette door (Fig. 10)
   (1) Insert the pivots of the cassette door into the pivot holes in the front panel.
   (2) Install the eject spring.

HTC-15

1. Removal of the top panel (Fig. 11)
   (1) Remove 5 screws ①.

2. Removal of the front panel (Fig. 12)
   (1) After removing the top cover, remove the flexible P.W.B., 1 connector ⓐ (W only), 2 screws ② and 2 screws ③.
   (2) Release the claws (2 claws at both left and right) and pull out the front panel towards the front.

3. Removal of the CD mechanism (Figs. 12 and 13)
   (1) After removing the top cover, disconnect 1 connector ⓑ and 3 connectors ⓒ. (Fig. 12)
   (2) Remove 4 screws ④. (Fig. 12)
   (3) Lift up the CD mechanism and release the Bosss at the front of the CD-mechanism from the CD-mechanism holder, then pull it out towards the back. (Fig. 13)

4. Removal of the CD-P.W.B. (Fig. 12)
   (1) After removing the top cover, disconnect 3 connector ⓒ and 1 connector ⓓ.
   (2) Remove 3 screws ⑤ and 2 screws ⑥.

5. **Removal of the DISPLAY P.W.B. (Fig. 14)**
   (1) After removing the front panel, remove 7 screws ⑦.

6. **Removal of the MICROPHONE P.W.B. (Fig. 14)**
   (1) After removing the front panel, remove 1 screw ⑧.

HTC-C15

1. **Removal of the top cover (Fig. 15)**
   (1) Remove 5 screws ①.

2. **Removal of the front panel (Fig. 16)**
   (1) After removing the top cover, remove the flexible P.W.B.
   (2) Remove 1 connector ⓐ (W only), 2 screws ② and 3 screws ③.
   (3) Release the claws (2 claws at both left and right) and pull out the front panel towards the front.

3. **Removal of the CDC P.W.B. (Fig. 16)**
   (1) After removing the top cover, remove the flexible P.W.B., 3 cables and 2 connector ⓑ.
   (2) Remove 2 screws ④ and 4 screws ⑤.

4. **Removal of the CD mechanism (Figs. 16 and 17)**
   (1) After removing the top cover and front panel.
   (2) Remove 3 cables and 2 connector ⓑ (Fig. 15) and 2 screws ⑥, and 2 washers.
   (3) Release the CD mechanism push it inside to release the hook, then pull it out while lifting it.

5. **Removal of the DISPLAY P.W.B. (Fig. 18)**
   (1) Remove the front panel.
   (2) Remove 4 screws ⑦ and 2 screws ⑧.

6. **Removal of the switch P.W.B. (Fig. 18)**
   (1) Remove the front panel.
   (2) Remove 2 screws ⑧ and 1 screw ⑨.

7. **Removal of the MIC P.W.B. (Fig. 18, W only)**
   (1) Remove 1 screw ⑩.

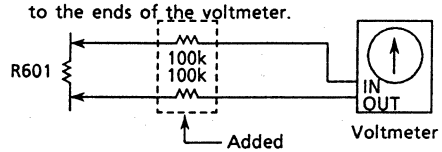
8. Disengage CD Changer Mechanism (Fig. 19 and 20)
   (1) Release 2 screws ⑪, and remove ⓒ.
   Push lift cam to the position as shown in Fig 19, then raise the rail base up.
   (2) Pull P rail base out, and remove P1 tray from the set. Use a "-" screwdriver to lift the hook (Part A), then pull out the P rail base from the set.
   (3) Remove rail base as followed; (Fig. 21,22, 23 and 24)
      1. Press Arm ① with left little finger and Arm ② with left thumb, then hold the rail base with back of left hand. Release Arm ③-1 located on rail base from the P base with right hand, then remove Arm ③-2 beside the P base from the rail base.
      2. Use left little finger to press Arm ① , and back of left hand to hold rail base. Release Arm ②-1 located on rail base from the P base with right hand, then remove Arm ②-2 beside the P base from the rail base.
      3. Use back of right hand to hold the rail base. Release Arm ①-1 locate on rail base from the P base with left hand, then remove Arm ①-2 beside the P base from the rail base.

   Place rail base on P base on the order of 3→2→1.
   (4) T/T Base (Fig. 25)
   Remove 3 screws ⑫ ,then disengage T/T base from the p base.
   (5) Installation of Gear (Fig. 26, 27 and 28)
      1. Pull p slide rail to the front, then fit P railbase on the top of P base and P slide rail.
      2. When P rail base is inserted into P base, and the hook of P rail base in Part A matches with P slide rail, P gear B shall be at the position as shown in the figure of Part B.
      3. Fit up P gear B with point B aiming at the direction of P gear A1 and assenble the wheel shafts of P gear A1 and P gear B. Then conjungate P gear B and P gear A1.
   (6) CD Changer Mechanism packing status when transporting (Fig. 29)
   For assembly or transportion of the set, the rail base and lift cam should be positioned as Fig. 16.
   (7) Replacing the belt (Fig. 19 and 20)
      1. Remove two screws ⑪. Push the tray stopper and hold it, then remove section ⓒ.
      2. Push the lift cam in the direction of the arrow, lift the rail base and set FE gear D to the upper position.
      3. Turn FE gear C and pull out the P rail base.
      4. Remove PE gear B and replace the belt. Be careful of the gear position when reinstalling PF gear B.

9. Checking the objective lens (Fig. 30)
   Handle so that dirt or dust does not adhere to the objective lens in the lens actuator. When the unit has been used for a long time, dust or dirt may adhere to the objective lens. clean the lens surface using a cotton swab.

10. Check the laser
    Normally, the laser is driven by a current of 40 to 80mA. If the laser drive current value is 120mA or more when measuring the circuit, it may be defective.
    (Current is measured with a voltage of 0.9 to 1.8V between both ends of 22 ohm R602.)

[Caution]
When the voltage is to be measured between both ends of R601, since there is a danger that the laser could be broken by surge generated by the voltmeter, measure the voltage via the 100k ohm resistors added to the ends of the voltmeter.



If a battery tester is used, it can be measured directly.

11. Cautions when servicing.
    (1) Semiconductor laser
    The semiconductor laser is very sensitive to electrostatic breakdown and surge current. Do not touch the terminals of the semiconductor laser and flexible P.W.B. with your fingers or tools.
    Relationship between current and light intensity is shown in Fig. 30. When the threshold current is exceeded, intensity changes steeply.
    (2) Handling of the unit mechanism section (Fig. 31)
    When handling the pickup mechanism section or the unit mechanism section, use the grounding ring as shown in Fig. 31. (The grounding ring can be made from a normal lead wire.)

POINTS DE DEPANNAGE

HAD-12/15

1. Retirer le couvercle supérieur (Fig. 1)
   (1) Retirer les 7 vis de fixation ①.

2. Retirer la plaque de faéçade (Figs. 2 et 3)
   (1) Après avoir retiré le couvercle supérieur, retirer les 2 vis de fixation ② et les 3 vis de fixation ③.
   (2) Retirer les boutons de réglage de VR, les écrous de fixation et les rondelles.
   (3) Retirer les 9 connecteurs de la carte de circuits imprimés audio, 1 connecteur de la carte de circuits imprimés en film souple et 2 connecteurs de la carte de circuits imprimés principale.
   (4) Appuyer sur la touche d'éjection pour obtenir l'ouverture de la trappe à cassette.
   Libérer les crochets (2 crochets placés à gauche et à droite) des griffes et dégager la plaque de façade een agissant vers l'avant.

3. Séparation de la carte de circuits imprimés audio (Fig. 2 et 4)
   (1) Retirer les boutons de réglage de VR et les rondelles. (Fig. 2)
   (2) Après avoir retiré le couvercle supérieur, retirer les 2 vis de fixation ④ (les 8 vis de fixation pour E, E (BS) et E (Z), les 7 vis de fixation pour UC, W, W (UN) et W (AU) et les 4 vis de fixation ⑤.
   (3) Débrancher les 8 connecteurs de la carte de circuits imprimés audio et les 2 connecteurs de la carte de circuits imprimés en film souple.
   (4) Retirer les 3 vis de fixation ⑥. (Sauf E (Z))
   Retirer les 4 vis de fixation ⑥. (De E)

4. Séparation de la carte de circuits imprimés principale (Fig. 5)
   (1) Après avoir retiré la carte de circuits imprimés audio, débrancher les 2 connecteurs de la carte de circuits imprimés principale et libérer les 8 parties soudées.
   (2) Retirer les 5 vis de fixation ⑦ de la carte de circuits imprimés principale.

5. Séparation de récepteur panoramique (Fig. 6)
   (1) Après avoir retiré la plaque de façade.

6. Séparation du mécanisme de commande de cassette (Fig. 6 et 7)
   (1) Après avoir retiré la plaque de façade.
   (2) Retirer les 8 vis de fixation ⑨, Ⓐ puis retirer le châssis du mécanisme de platine à casettes de la plaque de façade. (Utiliser les vis de fixation 3 x 8 les plus courtes. Si les vis de fixation de 3 x 10 sont utilisées, un trou est percé dans la plaque de façade, ce qui aura pour effet d'affecter son aspect extérieur.)
   (3) Précautions à prendre lors du remontage du mécanisme de platine (Fig. 7)
   - Disposer de telle sorte que le levier d'éjection soit placé sur la came d'éjection.
   - Vérifier que le levier interne est repoussé par la came d'éjection lorsque la touche d'éjection est pressée.

   [Attention]
   Au moment de reposer la platine à cassettes, vérifier que la came d'éjection est bien placée sous le levier d'éjection.
   Si la platine à cassettes est installée alors que la touche d'éjection est pressée, le bras d'éjection et le levier d'éjection se coincent, ce qui empêchera la platine à cassettes de fonctionner normalement. Soulever légèrement la plaque de façade et installer la platine à cassettes sans appuyer sur la touche d'éjection. (Fig. 7)

7. Séparation du volet de trappe à cassette (Fig. 8)
   (1) Retirer le couvercle supérieur, la plaque de façade et le ressort d'éjection.
   (2) Introduire un petit tournevis dans le trou qui se trouve sur le côté de la plaque de façade pour libérer le pivot d'un côté puis libérer le pivot de l'autre côté et retirer la trappe àcassette.

8. Séparation de la carte de circuits imprimés de latine O.P. (Fig. 9)
   (1) Retirer la plaque de façade et le mécanisme de platine.
   (2) Retirer les 2 vis de fixation ⑩ et retirer le support de mécanisme de platine et la carte de circuits imprimés O.P.
   (3) Vérifier que la came d'éjection se trouve dans la position exacte au moment de remonter le support de mécanisme de platine.

9. Remontage de la trappe à cassette (Fig. 10)
   (1) Engager les pivots de la trappe à cassette dans les trous de pivot de la plaque de façade.
   (2) Remonter le ressort d'éjection.

HTC-15

1. Retirer la plaque supérieure (Fig. 11)
   (1) Retirer les 5 vis de fixation ①.

2. Retirer la plaque de façade (Fig. 12)
   (1) Après avoir retiré le couvercle supérieur, retirer la carte de circuits imprimés en film souple, 1 connecteur ⓐ (W seulement), les 2 vis de fixation ② et les 2 vis de fixation ③.
   (2) Libérer les crochets (2 crochets placés à gauche et à droite) des griffes et dégager la plaque de façade en agissant vers l'avant.

3. Séparation du mécanisme de platine CD (Figs. 12 et 13)
   (1) Après avoir retiré le couvercle supérieur, débrancher le connecteur ⓑ et les 3 connecteurs ⓒ. (Fig. 12)
   (2) Retirer les 4 vis de fixation ④. (Fig. 12)
   (3) Soulever le mécanisme de platine CD et libérer le bossage de l'avant du mécanisme de platine CD du support de mécanisme de platine CD puis dégager vers l'arrière. (Fig. 13)

4. Séparation de la carte de circuits imprimés CD (Fig. 12)
   (1) Après avoir retiré le couvercle supérieur, débrancher les connecteurs ⓒ et 1 connecteur ⓓ.
   (2) Retirer les 3 vis de fixation ⑤ et les 2 vis de fixation ⑥.

5. Séparation de la carte de circuits imprimés d'affichage (Fig. 14)
   (1) Après avoir retiré la plaque de façade, retirer les 7 vis de fixation ⑦.

6. Séparation de la carte de circuits imprimés de mic (Fig. 14)
   (1) Après avoir retiré la plaque de façade, retirer la vis de fixation ⑧.

HTC-C15

1. Retirer la plaque supérieure (Fig. 15)
   (1) Retirer les 5 vis de fixation ①.

2. Retirer la plaque de façade (Fig. 16)
   (1) Après avoir retiré le couvercle supérieur, retirer la carte de circuits imprimés en film souple.
   (2) Retirer 1 connecteur ⓐ (W seulement), les 2 vis de fixation ② et les 2 vis de fixation ③.
   (3) Libérer les crochets (2 crochets placés à gauche et à droite) des griffes et dégager la plaque de façade en agissant vers l'avant.

3. Séparation de la carte de circuits imprimés CDC (Fig. 16)
   (1) Après avoir retiré le couvercle supérieur, retirer la carte de circuits imprimés en film souple, les 3 câbles et les deux connecteurs ⓑ.
   (2) Retirer les 2 vis de fixation ④ et les 4 vis de fixation ⑤.

4. Séparation du mécanisme de platine CD (Fig. 16 et 17)
   (1) Retirer le couvercle supérieur et la plaque de façade.
   (2) Retirer les 3 câbles et les 2 connecteurs ⓑ (Fig. 15) et les 2 vis de fixation ⑥
   (3) Libérer le mécanisme de platine CD des griffes et le repousser vers l'intérieur de façon à libérer le crochet puis le dégager vers l'extérieur tout en le soulevant.

5. Séparation de la carte de circuits imprimés DISPLAY (Fig. 18)
   (1) Retirer la plaque de façade.
   (2) Retirer les 4 vis de fixation ⑦ et les 2 vis de fixation ⑧.

6. Séparation de la carte de circuits imprimés des commutateurs (Fig. 18)
   (1) Retirer la plaque de façade.
   (2) Retirer les 2 vis de fixation ⑧ et une vis de fixation ⑨.

7. Séparation de la carte de circuits imprimés de microphone (Fig. 18, W uniquement)
   (1) Retirer la vis de fixation ⑩.

8. Dégager le mécanisme de changeur CD (Fig. 19 et 20)
   (1) Libérer les 2 vis de fixation ⑪et retirer ⓒ. Repousser la came de levage de façon à la placer dans la position représentée sur l'illustration 18 puis soulever la base du rail.
   (2) Tirer la base du rail vers l'extérieur puis retirer le plateau P1 et le séparer de l'appareil. Se servir d'un tournevis ordinaire pour soulever le crochet (partie A) et soulever la base du rail P pour la séparer de l'appareil.
   (3) Retirer la base du rail en procédant de la façon suivante; (Fig. 21,22,23 et 24)
      1. Appuyer sur le bras ① d'un doigt de la main gauche et sur le bras ② du pouce de la main gauche et immobiliser la base du rail avec le dos de la main. Libérer le bras ③-1 qui est installé sur la base du rail à partir de la base P en procédant de la main droite puis retirer le bras ③-2 placé à côté de la base P en procédant à partir de la base du rail.
      2. Utiliser le petit doigt de la main gauche pour appuyer sur le bras ① et le dos de la main gauche pour immobiliser la base du rail. Libérer le bras ②-1 qui est installé sur la base du rail à partir de la base P en procédant de la main droite puis retirer le bras ②-2 placé à côté de la base P en procédant à partir de la base du rail.
      3. Utiliser le dos de la main droite pour immobiliser la base du rail. Libérer le bras ①-1 qui est installé sur la base du rail à partir de la base P en procédant de la main gauche puis retirer le bras ①-2 placé à côté de la base P en procédant à partir de la base du rail.

      Placer la base du rail sur la base P en respectant l'ordre 3→2→1.

(4) Base T/T (Fig. 25)
Retirer les trois vis de fixation ⑫ puis dégager la base T/T de la base p.

(5) Remontage de roue dentée d'engrenage (Fig. 26, 27 et 28)
1. Tirer sur le rail coulissant en procédant de l'avant puis installer la base du rail sur la partie supérieure de la base P et sur le rail coulissant P.
2. Lorsque la base du rail P est engagée dans la base P et que le crochet de la base du rail P se trouve dans la partie A et correspond avec le rail coulissant P, la roue dentée d'engrenage P et B doit se trouver dans la position représentée sur la figure de la partie B.
3. Installer la roue dentée d'engrenage P et B avec la section B dirigée vers la roue dentée d'engrenage P A1 et assembler les axes de roue de la roue dentée d'engrenage P A1 et de la roue dentée d'engrenage P B. Ensuite, faire correspondre la roue dentée d'engrenage P B et la roue dentée d'engrenage P A1.

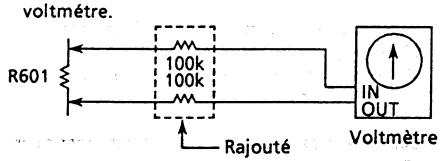
(6) Conditions d'emballage du mécanisme
Lorsque l'ensemble doit être assemblé ou transporté, la base du rail et la came de levée doivent se trouver dans la position représentée sur la figure 29.

(7) Remplacement de la courroie d'entraînement (Fig. 19 et 20)
1. Retirer les deux vis de fixation ⑪ . Repousser la butée de plateau et l'immobiliser dans cette position puis retirer la section Ⓒ.
2. Repousser la came de levage en agissant dans la direction indiquée par la fléche, soulever la base du rail et placer la roue dentée d'engrenage FE D en position haute.
3. Faire tourner la roue dentée d'engrenage PE B et remplacer la courroie d'entraînement. Faire attention à la position de la roue dentée d'engrenage au moment de reposer la roue dentée d'engrenage FE B.

9. Vérification de l'optique de lecture (Fig. 30)
Manipuler de telle sorte que ni poussière ni saleté ne colle à la surface de l'optique de lecture dans le dispositif de commande d'optique. Quand l'appareil a fonctionné pendant une durée prolongée, il se peut que de la poussière ou des saletés adhèrent à la surface de l'optique de lecture, ce qui implique de nettoyer la surface de l'optique de lecture avec un coton-tige.

10. Vérification du laser
En principe, le laser est excité par une intensité de l'ordre de 40 à 80 mA. Si la valeur d'intensité d'excitation du laser est égale ou supérieure à 120 mA quand le circuit est mesuré, il est possible qu'il y ait anomalie.
(Le courant est mesuré avec une tension comprise entre 0,9 et 1,8 V entre les deux extrémités de R062 22 ohms.)

[Attention]
Lorsque la tension doit être mesurée entre les deux extrémités de R601 et étant donné qu'il y a un risque d'endommagement du laser s'il est soumis à un courant transitoire anormal produit par le voltmètre, la tension doit être mesurée en passant par l'intermédiaire de résistances de 100k-ohms rajoutées aux deux extrémités du voltmétre.



Quand un contrôleur de batterie est utilisé, il est possible de mesurer directement la tension.

11. Mesures de précautions à prendre lors du dépannage

(1) Laser à semi-conducteurs
Le laser à semi-conducteurs est un composant particulièrement sensible au rupture électrostatique et les surintensités. Ne jamais toucher les bornes du laser à semi-conducteurs ni la carte de circuits imprimés en film souple directement avec les doigts ou avec des outils. Le rapport qui existe entre l'intensité et l'intensité lumineuse est représenté sur la figure 30. Lorque le courant de seuil est dépassé l'intensité change brutalement.

(2) Manipulation de la section de mécanisme de platine (Fig. 31)
Utiliser un anneau de mise à la terre lors des manipulations de la section de mécanisme de platine de lecture ou la section mécanisme comme indiqué sur la figure 31.
(L'anneau de mise à la terre peut être réalisé avec du fil de connexion ordinaire.)

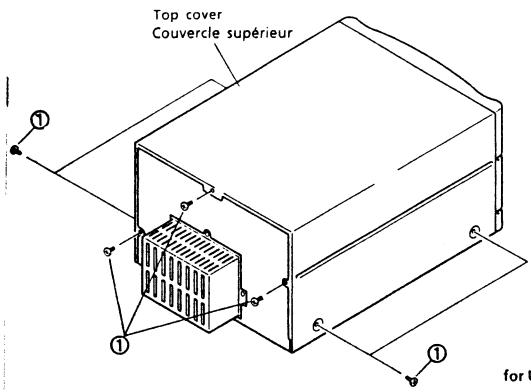
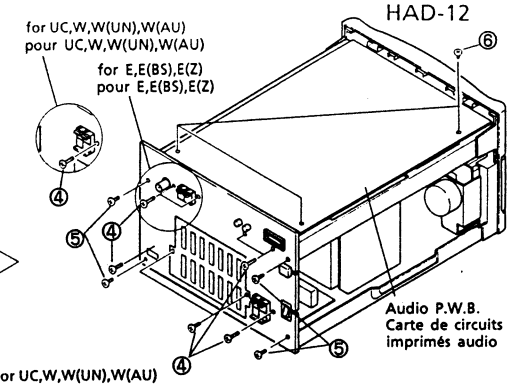


Fig. 1



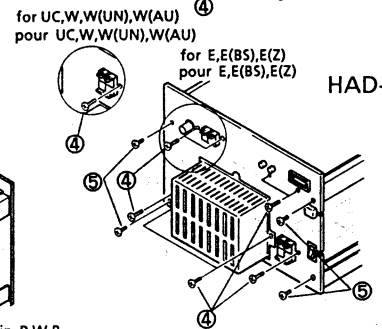


Fig. 4

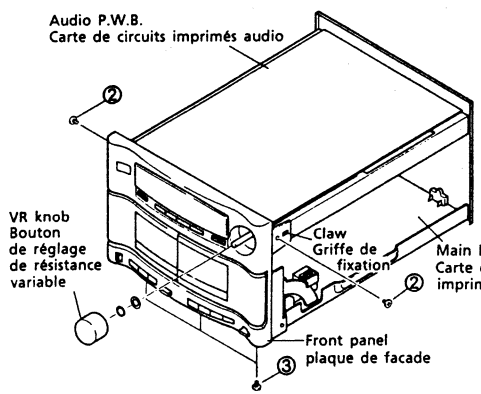


Fig. 2

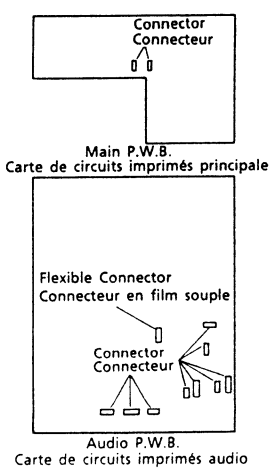


Fig. 3

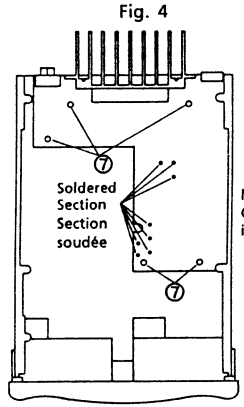


Fig. 5

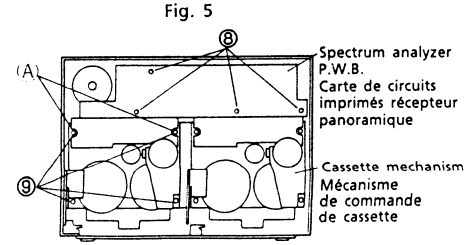


Fig. 6

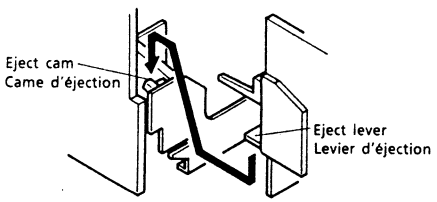
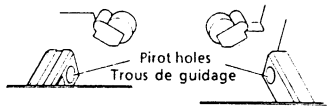


Fig. 7



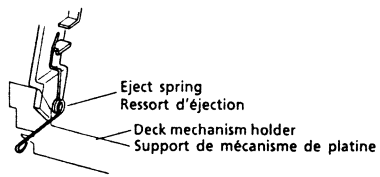


Fig. 10

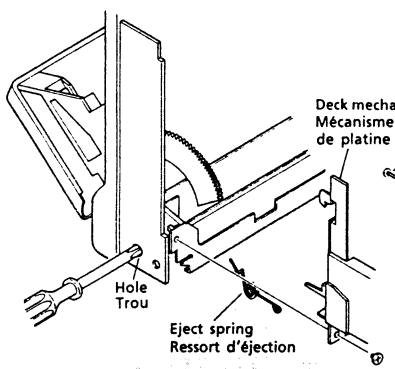


Fig. 8

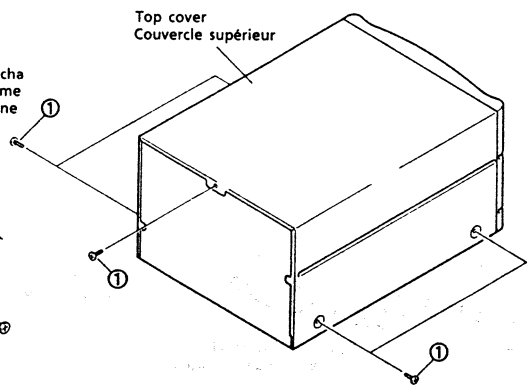


Fig. 11

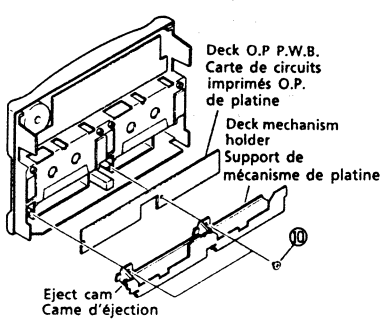


Fig. 9

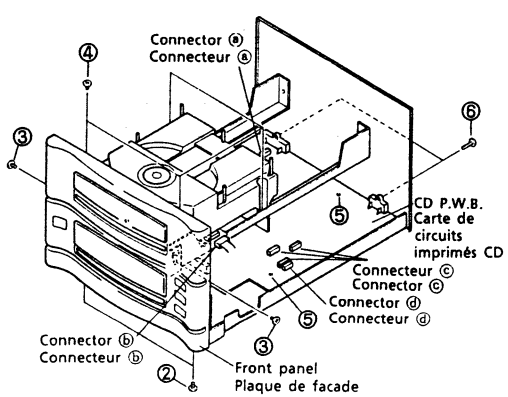


Fig. 12

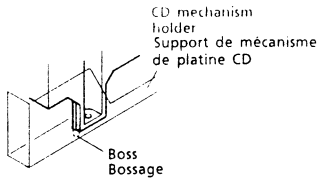


Fig. 13

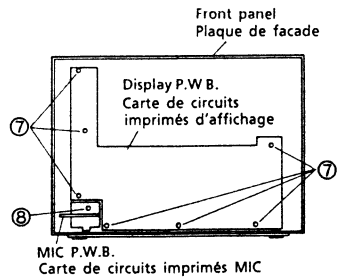


Fig. 14

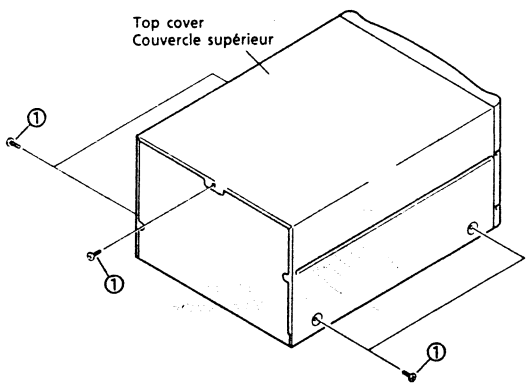


Fig. 15

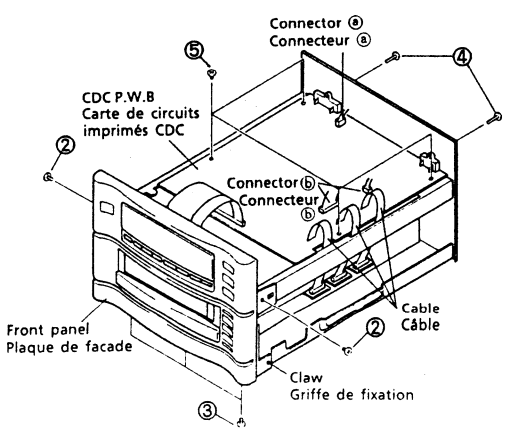


Fig. 16

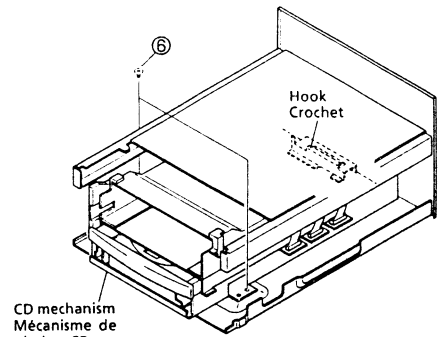


Fig. 17

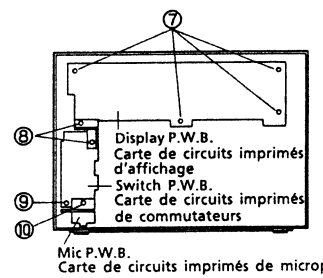


Fig. 18

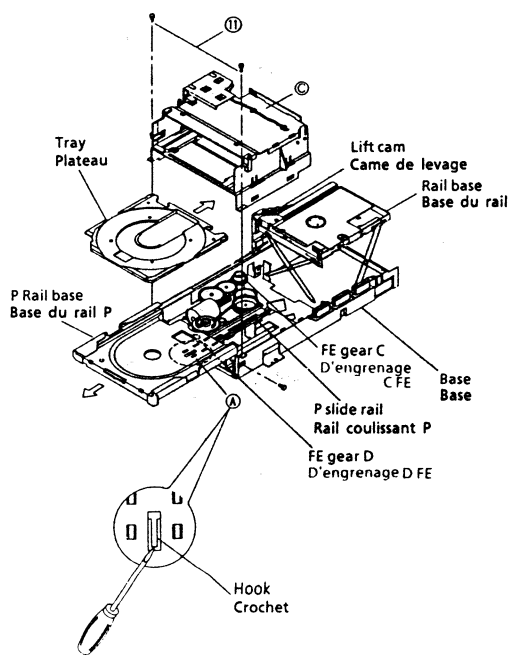


Fig. 19

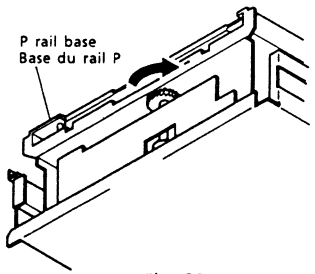


Fig. 20

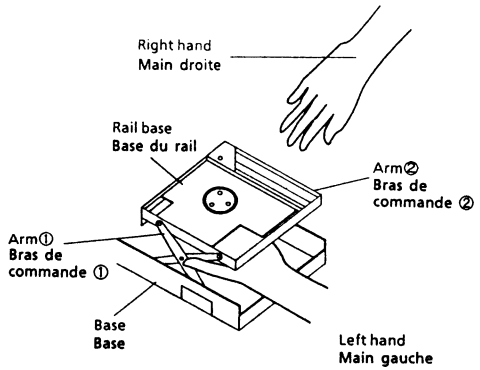


Fig. 23

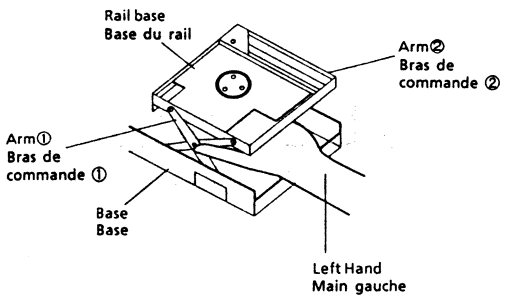


Fig. 21

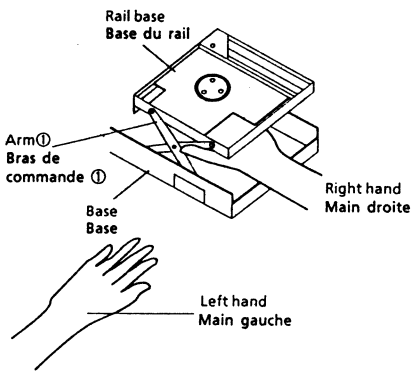


Fig. 24

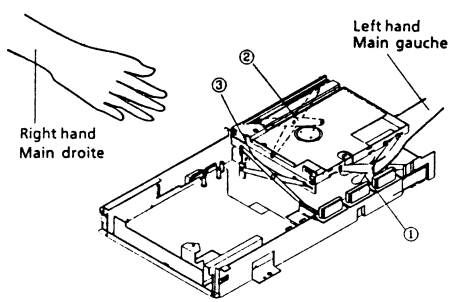


Fig. 22

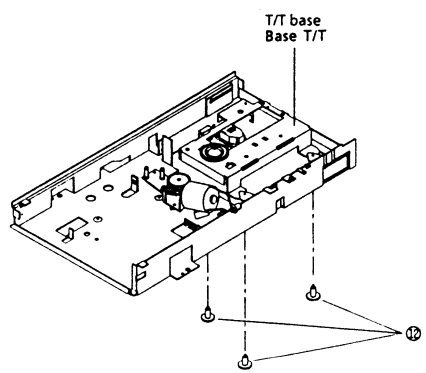


Fig. 25

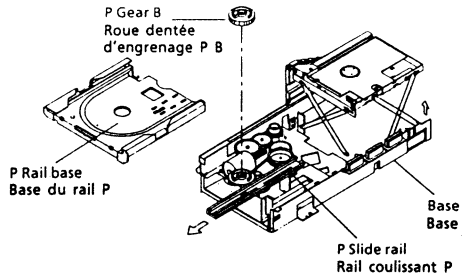


Fig. 26

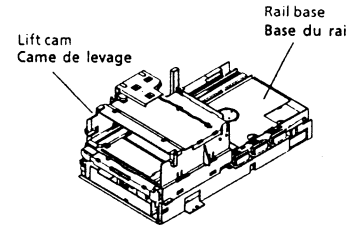


Fig. 29

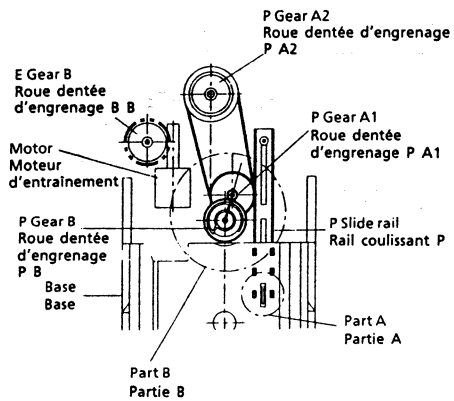


Fig. 27

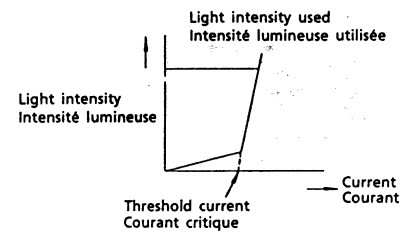


Fig. 30

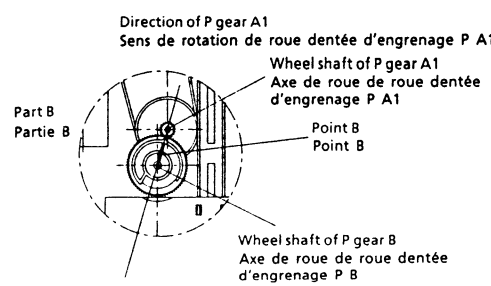


Fig. 28

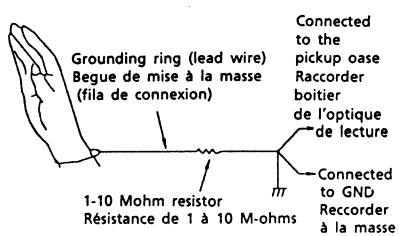
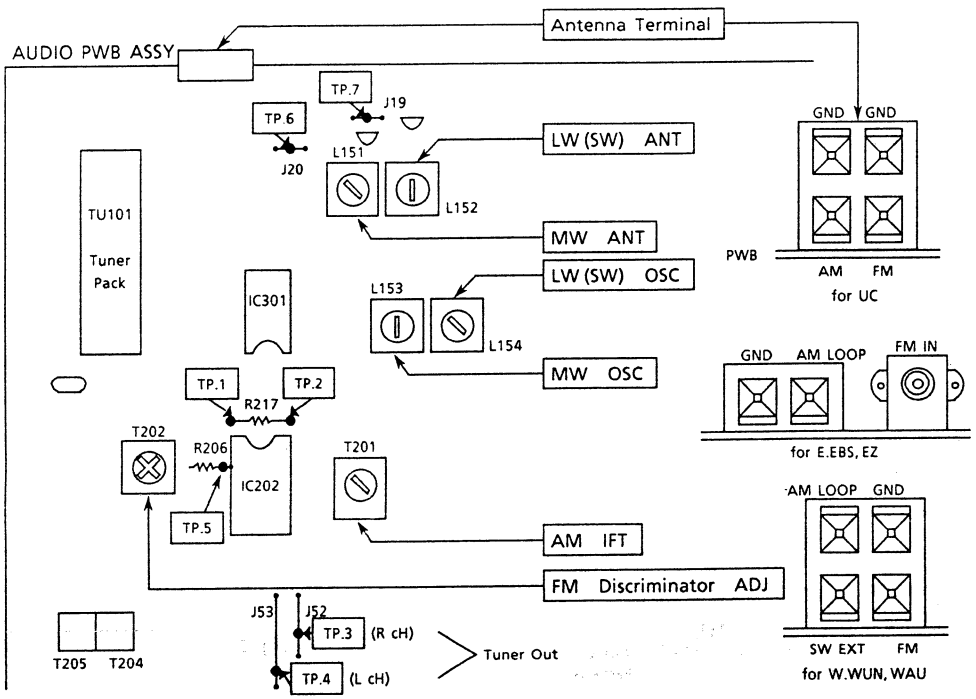


Fig. 31

ADJUSTMENT

• Adjustment points
(Radio section)



1.REDIO SECTION

1-(1) AM section

Destination	Step		Adjustment item	Measuring instrument and connection: Measuring Instrument	Input Terminal	Output Terminal	Genescope or Signal Generator Frequency	Dial Pointer Position	Adjust	Reading
UC, E, EBS, EZ, W, WUN, WAU	1	(1)	AM IF	• Genescope	Loop antenna	TP. 5	450 kHz	Highest	T201	(Note 1)
UC, E, EBS, EZ, W, WUN, WAU	2	(1)	MW OSC. (Covering)	• AM signal generator (400 Hz, 30% mod.) • VTVM • Oscilloscope	Loop antenna	TP. 6	522 kHz 530 kHz	Lowest	L153	(Note 2)
UC, E, EBS, EZ, W, WUN WAU	3	(1)	MW ANT. (Tracking)	• AM signal generator (400 Hz, 30% mod.) • VTVM • Oscilloscope	Loop antenna	TP. 3 and 4 or SP OUT	603 kHz 600 kHz	603 kHz 600 kHz	L151	(Note 3)
E, EBS, EZ	4	(1)	LW OSC. (Covering)	• AM signal generator (400 Hz, 30% mod.) • VTVM • Oscilloscope (RIF switch : B)	Loop antenna	TP. 7	153 kHz	Lowest	L154	(Note 4)
E, EBS, EZ	5	(1)	LW ANT. (Tracking)	• AM signal generator (400 Hz, 30% mod.) • VTVM • Oscilloscope (RIF switch : B)	Loop antenna	TP. 3 and 4 or SP OUT	164 kHz	164 kHz	L152	(Note 3)
W, WAU WUN	6	(1)	SW OSC. (Covering)	• AM signal generator (400 Hz, 30% mod.) • VTVM • Oscilloscope	SW EXT Antenna Terminal	TP. 7	3.8 MHz	Lowest	L154	(Note 4)
W, WAU WUN	7	(1)	SW ANT. (Tracking)	• AM signal generator (400 Hz, 30% mod.) • VTVM • Oscilloscope	SW EXT Antenna Terminal	TP. 3 and 4 or SP OUT	4.0 MHz	4.0 kHz	L152	(Note 3)

1-(2) FM Section

Step		Adjustment Item	Measuring Instrument and Connection: Measuring Instrument	Input Terminal	Output Terminal	Genescope or Signal Generator Frequency	Dial Pointer Position	Adjust	Reading
1	(1)	Discriminator	DC balance meter	FM antenna 400 Hz 22.5kHz DEV. 60 dB	TP. 1 TP. 2	98 MHz	98 MHz	T202	0 ± 50 mV

Note 1 :
When the signal from the signal generator is weak, make adjustment until the waveform becomes maximum and symmetrical as shown in Fig. 1.
Increase the output of the sweep generator, and adjust the waveform until the width of its part C becomes as flat as possible.

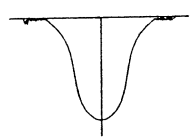


Fig. 20

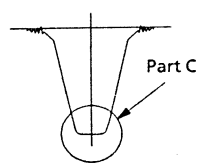


Fig. 21

Note 2 :
For the MW covering adjustment, follow the procedure shown below.
(1) Connect the DC voltmeter to TP6.
(2) Adjust L153 until the value shown in the following table is obtained.

Destination	U.C	E,EBS,EZ W,WUN, WAU
Lower limit frequency	530 kHz	522 kHz
Reading of voltmeter	1.2V ± 0.1V	1.15V ± 0.1V

Note 3 :
Initially, set the input level to 74 dB/m.
As the adjustment advances, reduce the input level to the minimum level required (approx. 60 dB).
Tracking : Since the trimmer capacitor is omitted, adjustment at the upper limit frequency is not required.

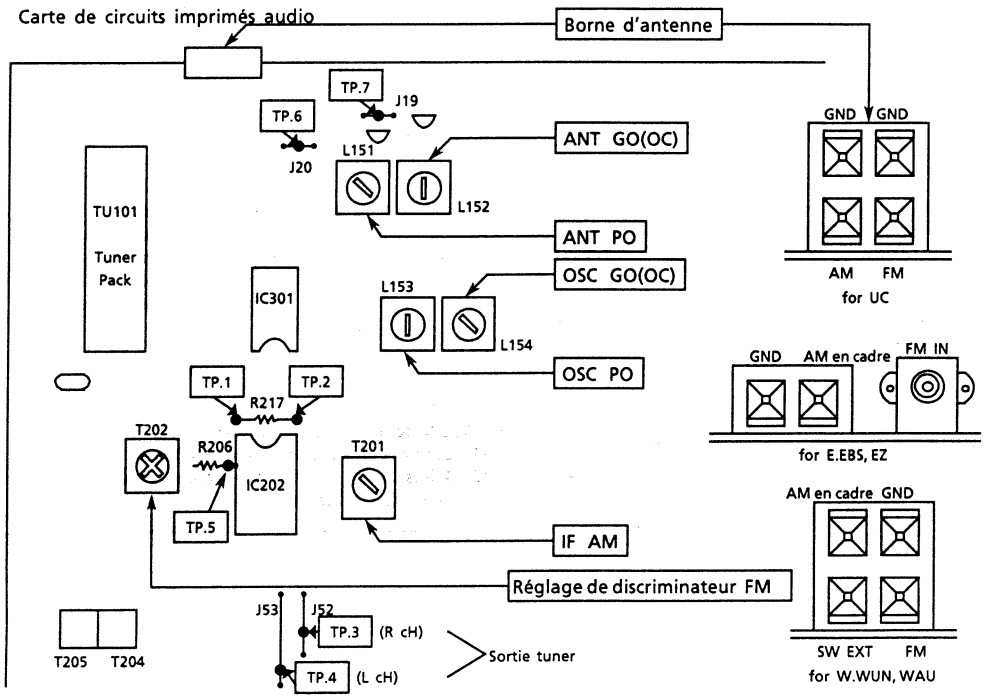
Note 4 :
SW, LW coverage is as follows.
(1) Connect the DC voltmeter to TP7.
(2) Adjust L154 so that the values shown in Table below are obtained.

Destination	E,EBS,EZ	W,WUN, WAU
Lower limit frequency	153 kHz	3.8 MHz
Reading of voltmeter	1.2V ± 0.1V	1.35V ± 0.1V
	(LW)	(SW)

AX12
AXC12
AX15
AXC15

RÉGLAGE

• Points de réglage (Section radio)



1. SECTION RADIO

1-(1) section AM

Destination	Etape		Object de réglage	Instrument de mesure et branchements			Généscope ou fréquence du générateur de signal	Position de l'aiguille du cadran	Réglage	Lecture
				Instrument de mesure	Borne d'entrée	Borne de sortie				
UC, E,EBS, EZ, W,WUN, WAU	1	(1)	IF AM	• Généscope	Antenne en cadre	TP. 5	450 kHz	La plus haute	T201	(Remarque 1)
UC, E,EBS, EZ, W,WUN, WAU	2	(1)	OSC. OC2 (coverture)	• Générateur de signal AM (400 Hz, mod 30%.) • VTVM • Oscilloscope		TP. 6	522 kHz	La plus basse	L153	(Remarque 2)
							530 kHz			
UC, E,EBS, EZ, W,WUN WAU	3	(1)	ANT. PO (poursuite)			TP3 et TP4 ou SP OUT (hors circuit)	603 kHz	603 kHz	L151	(Remarque 3)
							600 kHz	600 kHz		
E,EBS, EZ	4	(1)	OSC. GO (coverture)	• Générateur de signal AM (400 Hz, mod 30%.) • VTVM • Oscilloscope (RIF switch : B)	Antenne en cadre	TP. 7	153 kHz	La plus basse	L154	(Remarque 4)
E,EBS, EZ	5	(1)	ANT. GO (poursuite)			TP3 et TP4 ou SP OUT (hors circuit)	164 kHz	164 kHz	L152	(Remarque 3)
W,WAU WUN	6	(1)	OSC. OC (coverture)	• Générateur de signal AM (400 Hz, mod 30%.) • VTVM • Oscilloscope	Borne d'antenne SW EXT	TP. 7	3.8 MHz	La plus basse	L154	(Remarque 4)
W,WAU WUN	7	(1)	ANT. OC (poursuite)			TP3 et TP4 ou SP OUT (hors circuit)	4.0 MHz	4.0 kHz	L152	(Remarque 3)

1-(2) Section FM

Etape		Object de réglage	Instrument de mesure et branchements			Généscope ou fréquence du générateur de signal	Position de l'aiguille du cadran	Réglage	Lecture
			Instrument de mesure	Borne d'entrée	Borne de sortie				
1	(1)	Discrimi-nateur	Contrôleur d'équilibre c.c.	Antenne FM 400 Hz Écart de 22.5 kHz 60 dB	TP. 1 TP. 2	98 MHz	98 MHz	T202	0 ± 50 mV

Remarque 1 :
Lorsque le signal provenant du générateur de signaux est faible, effectuer un réglage jusqu'à ce que la forme d'onde ait une amplitude maximale et symétrique comme représentée sur la figure 1.
Augmenter le niveau de sortie du générateur de balayage et ajuster la forme d'onde jusqu'à ce que la largeur de sa section C soit la plus plate possible.

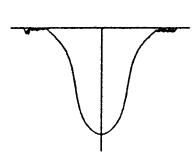


Fig. 20

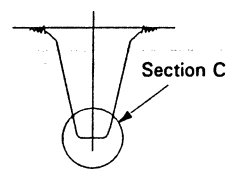


Fig. 21

Remarque 2 :
En ce qui concerne les réglages de couverture PO, procéder de la façon suivante.
(1) Raccorder un voltmètre à courant continu à TP6.
(2) Ajuster L153 jusqu'à ce que les valeurs indiquées soient identiques à celles du tableau ci-dessous.

Destination	U.C	E,EBS,EZ W,WUN, WAU
Fréquence de limite inférieure	530 kHz	522 kHz
Indication fournic par le voltmetre	1.2V ± 0.1V	1.15V ± 0.1V

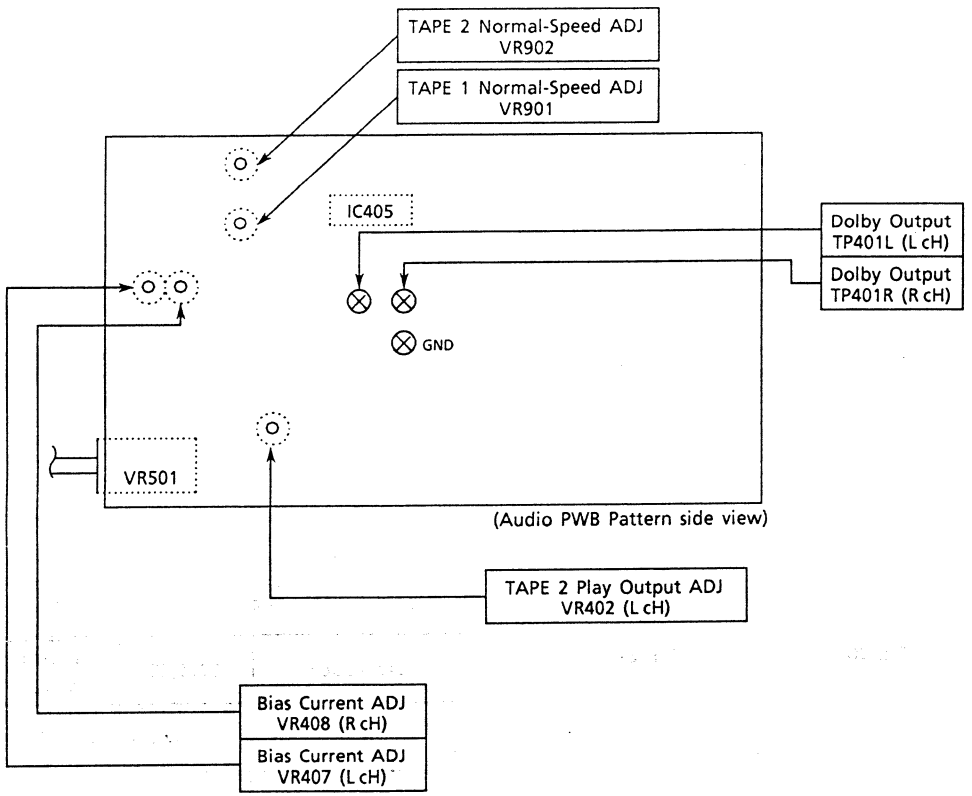
Remarque 3 :
Régler tout d'abord sur un niveau d'entrée de 74 dB/m.
Au fur et à mesure que les réglages progressent, atténuer le niveau d'entrée jusqu'à la valeur minimale requise (environ 60 dB).
Alignement : Comment le condensateur trimmer est omis, le réglage à la fréquence limite supérieure n'est pas exigé.

Remarque 4 :
En ce qui concerne les réglages de couverture OC, GO, procéder de la faÇon suivante.
(1) Raccorder un voltmètre à courant continu à TP7.
(2) Ajuster L154 jusqu'à ce que les valeurs indiquées soient identiques à celles du tableau ci-dessous.

Destination	E,EBS,EZ	W,WUN, WAU
Fréquence de limite inférieure	153 kHz	3.8 MHz
Indication fournic par le voltmetre	1.2V ± 0.1V	1.35V ± 0.1V
	(LW)	(SW)

2. TAPE DECK SECTION

• Adjustment points



Symbol No.	Switches and Controls	Position
S	DOLBY NR	OFF
S	TAPE SW	AUTO
RV	REC VOL	ALC

Perform the following adjustments in the sequence stated after cleaning the head, pressure roller, and capstan with a head cleaning stick moistened in alcohol.

1. Tape speed adjustment

Normal speed

Input	Adjustment value	Adjustment position
Tape speed adjustment tape	3000 $^{+10}_{0}$ Hz	VR901 (TAPE 1) VR902 (TAPE 2)

Note : Perform the normal speed adjustment in this order. (Perform the adjustment in the FWD mode as reference and check that REW is within ± 1.5% with respect to FWD.)

Adjustment procedure

Normal speed

Connect the frequency counter to the Dolby output TP401L.R. Press the PLAY key and apply heatrunning for 20 minutes or more and apply cooling down for less than 30 seconds. Play the adjustment tape with TAPE1 and TAPE2 and adjust the tape speed at the center of the tape.

Note : Adjust so that the tape speed deviation between TAPE1 and TAPE2 is within 1%. (FWD mode as reference)

2. REC/PLAY head angle adjustment

Input	Adjustment value	Adjustment position
Angle correction tape MTT-256U Third section (125kHz tone)	Max. output	Head angle adjustment screw

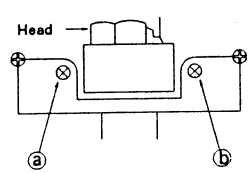
Connect the electronic voltmeter to the Dolby output TP401L.R and play the angle correction tape in FWD and REV modes and adjust. In FWD mode, adjust screw ⓐ, and adjust scr ew ⓑ in REV mode.

If the maximum values of both channels are different, match with the value of L channel. At this time, check that the difference of the maximum values between both channels is within 2dB.

If it is not, readjust.

Adjust the phase in both FWD and REV modes so that phase is within ± 45° for both channels.

Note : Be sure to stop after turning the screw in tightening direction. (Backlash may occur with the screw.)



Apply screw-lock paint to both ⓐ and ⓑ after the adjustment is completed. (Between screw and head base)

3. Play output adjustment

Test tape	Output	Adjustment position
Dolby standard tape MTT-150	300 mV	VR401 (RcH of TAPE2) VR402 (LcH of TAPE2)

Adjustment procedure

Connect the electronic voltmeter to the Dolby output TP401L.R and play the Dolby standard tape (MTT-150). Adjust VR401,VR402 so that the reading of the electronic voltmeter is the value shown above. (Adjust only in FWD mode.)

4. Bias current adjustment

Input	Output	Mode	Adjustment position
AUX	Dolby test point (P410)	REC→PLAY	VR407 (LcH) VR408 (RcH)

Adjustment procedure

Input the 1 kHz/12 kHz, 300mV -23dB (at TP401L.R) signal to AUX IN. Adjust VR407 and VR408 so that the play output level of 12.5kHz is within -23dB (+ 0.5dB~ + 1dB) from that of 1 kHz when these signals are recorded and played back with normal tape.

5. Cassette Chassis Inspection

No.	Inspection item	Reference value	Remarks
1	Playback torque	27 to 60 g.cm	
2	FF/REW torque	55 to 120 g.cm	
3	Supply back-tension	1.8 to 5.0 g.cm	
4	Tape drive force	Over 50 g (TAPE 1) Over 100 g (TAPE 2)	

LUBRICATION

Apply one or two drops of pan motor oil or sonic slider oil to rotating parts. Coat sliding parts with Molycoat (EL-10M).
Lubricate once a year or every 1,000 hours of operation. Do not let oil contact belts or idlers.

Rotating Parts	Metal to metal	Pan motor oil (10W-40)
	Plastics to metal	Sonic slider oil (#1600)
Sliding parts	(Note) Plastics to plastics Plastics to metal	Molycoat (EL-10M)
Spring vibration prevention		Flyol (GB-TS-1)

Note :
When front frame and slide knob are replaced, coat both contacting parts lightly with white grease.

MAINTENANCE

■ Clean cabinet and panels when dirty
Clean off dirt on the surfaces with a dry cloth. Never use thinners, benzene or alcohol since these will damage the surface finish.

AX12
AXC12
AX15
AXC15

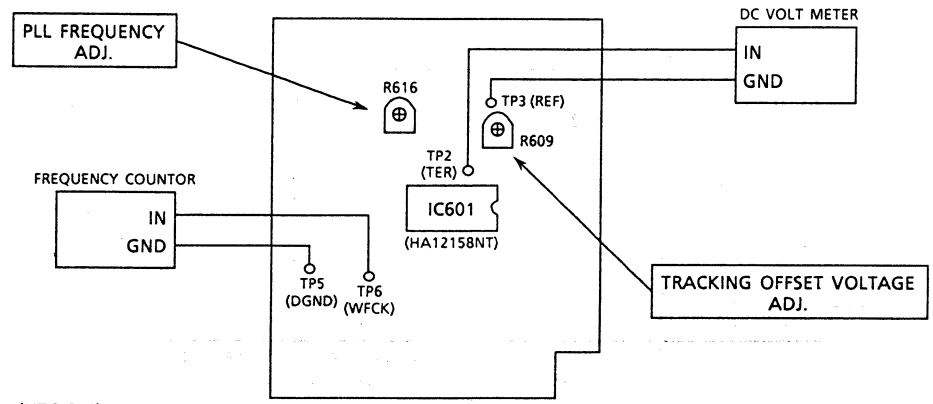
3. CD PLAYER SECTION

• Adjustment points

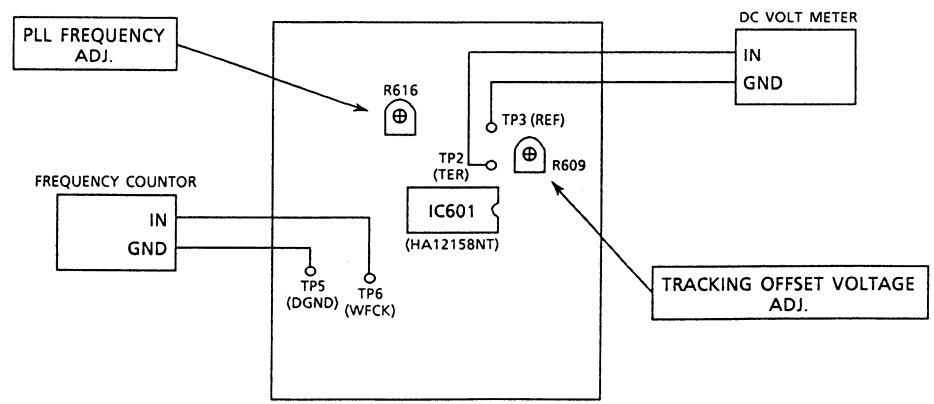
CAUTION

Do not adjust any pre-set Resistors or Controls, which are not detailed in the adjustment instructions for the CD Player as this may result in the exposure to hazardous radiation.

(HTC-15)



(HTC-C15)



1. **Preparation**
   (1) Turn on the power on, and set the function to "CD".
   (2) Open the CD tray.

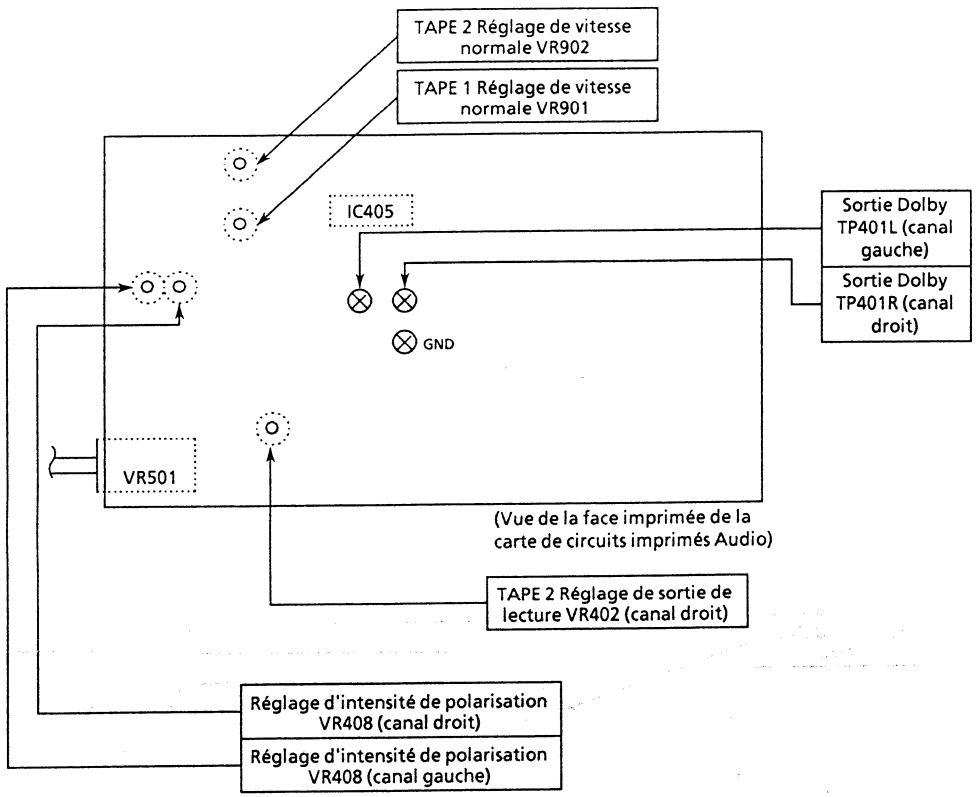
Adjustment method
   (1) Adjustment of tracking offset voltage
   Adjust R609 so that the voltage of TP2 (TER) should be within the limit of 0 ± 5mV.

   (2) Adjustment of pll frequency.
   Adjust R616 so that the frequency of TP6 (WFCK) shold be within the limit of belows.

Model	PLL Frequency
AX-15	7.90 ± 0.05kHz
AX-C15	7.90 ± 0.05kHz

2. SECTION MAGNETOCASSETTE

• Points de Réglage



No. de symbole	Commutateurs et organes de réglage	Position
S	DOLBY NR	OFF
S	TAPE SW	AUTO
RV	REC VOL	ALC

Effectuer les réglages suivants dans l'ordre indiqué après avoir effectué le nettoyage des têtes, des galet presseurs et du cabestan avec un bâtonnet de nettoyage imprégné d'alcool dénaturé.

1. Réglage de vitesse de défilement de la bande magnétique

Vitesse normale

Entrée	Valeur de réglage	Position de réglage
Bande d'étalonnage utilisée pour le réglage de vitesse	3000 +10 Hz 0	VR901 (TAPE 1) VR902 (TAPE 2)

Remarque : Effectuer le réglage de vitesse de défilement normale en respectant cet ordre. (Effectuer le réglage en mode FWD comme moyen de référence et vérifier qu'en mode REW, la valeur se situe dans les limites de + 1,5 % par rapport à la valeur obtenue en mode FWD.)

Procédure de réglage

Vitesse normale

Brancher le fréquencemètre à la sortie Dolby TP401L, R. Appuyer sur la touche PLAY et assurer un fonctionnement de mise à la température d'au moins 20 minutes puis laisser refroidir l'appareil pendant moins de 30 secondes. Lire la bande magnétique de réglage dans TAPE1 et TAPE2 et caler la vitesse de défilement de la bande magnétique puis faire le réglage sur la partie centrale de la bande magnétique.

Remarque : Remarque: Régler de telle sorte que l'écart de vitesse de défilement de la bande magnétique entre TAPE1 et TAPE2 soit de l'ordre de 1 % ou moins. (Prendre le mode FWD comme moyen de référence.)

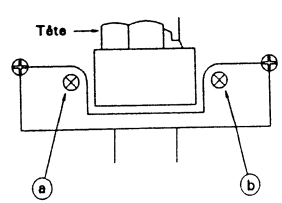
2. Réglage d'angle d'inclinaison de la tête REC/PLAY

Entrée	Valeur de réglage	Position de réglage
Bande d'étalonnage utilisée pour la correction de l'angle d'inclinaison Troisième section MIT256U (tonalité de 12,5 kHz)	Sortie maximum	Vis de réglage d'angle d'inclinaison de tête

Brancher un voltmètre électronique à la sortie Dolby TP401L, R et lire la bande d'étalonnage utilisée pour la correction de l'angle d'inclinaison en mode FWD et en mode REW puis régler. En mode FWD, régler avec la vis de réglage ⓐ et en mode mode mode REW, régler avec la vis de réglage ⓑ.

Si les valeurs maximales des deux canaux sont différentes, faire correspondre avec la valeur du canal gauche. Dans ce même temps, vérifier que la différence des valeurs maximales entre les deux canaux se situe dans les limites de 2 dB.

Dans le cas contraire, refaire un réglage. Caler la phase au cours des modes FWD et REW et faire en sorte que la phase se situe dans les limites de + 45o sur les deux canaux.



Remarque : Ne pas oublier de freiner après avoir manipulé la vis de réglage dans le sens du serrage. (Un jeu de réglage risque de se produire avec la vis de réglage.)

Tête Enduire les têtes de vis de réglage ⓐ et ⓑ de peinture de freinage quand les réglages sont terminés. (Enduire entre la vis et l'embase de tête.)

3. Réglage de niveau de sortie de lecture

Bande d'étalonnage	Sortie	Position de réglage
Bande d'étalonnage Dolby standard MTT-150	300 mV	VR401 (canal droit de TAPE2) VR402 (canal gauche de TAPE2)

Procédure de réglage

Brancher un voltmètre électronique à la sortie Dolby TP401L, R et lire la bande d'étalonnage Dolby standard. Ajuster VR401 et VR402 de telle sorte que le voltmètre électronique indique la valeur indiquée ci-dessus. (Ne faire le réglage qu'en mode FWD.)

4. Réglage du courant de polarisation

Entrée	Sortie	Mode	Position de réglage
AUX	Composant d'essai Dolby (P410)	REC→PLAY	VR407 (canal gauche) VR408 (canal droit)

Procédure de réglage

Injecter des signaux de 1 kHz/12 kHz, 300 mV, - 23 dB (à TP401L, R) par AUX IN. Ajuster VR407 et VR408 de telle sorte que le niveau de sortie de lecture de 12,5 kHz se situe dans les limites de - 23 dB (+ 0,5 dB - + 1 dB) à partir de celui de 1 kHz quand les signaux sont enregistrés et lus avec une bande magnétique normale.

5. Réglage du châssis de cassette

No.	Point d'inspection	Valeur de référence	Observation
1	Couple en lecture	De 27 à 60 g.cm	
2	Couple avance rapidez / rebobinage	De 55 à 120 g.cm	
3	Tension bobine débitrice	De 1.8 à 5.0 g.cm	
4	Force de défilement de band	Plus de 50 g (TAPE 1) Plus de 100 g (TAPE 2)	

LUBRIFICATION

Appliquer une ou deux gouttes d'huile moteur ou d'huile sonic pour curseur, sur les membres rotatifs.
De la graisse Molycort (EL-10M) est appliquée sur les membres coulissants.
Lubrifier une fois par an ou toutes les 1000 heures de fonctionnement.
Veiller à ne pas appliquer d'huile sur les courroies ou les galets.

Membres rotatifs	Entre les parties métalliques	Huile moteur (10W-40)
	Entre le moulage et les parties metalliques	Huile Sonic pour curseur (#1600)
Membres coulissants	(Remarque) Entre moulures entre moulures et piéces métalliques	Molycoat (EL-10M)
Prévention de vibration de ressort		Flyol (GB-TS-1)

Remarque :
Lorsque le châssis avant et le bouton curseur doivent être remplacés, appliquer une couche légère de graisse blanche sur les parties de contact.

ENTRETIEN

■ **Nettoyage du coffret et des panneaux lorsqu'ils sont sales**

Enlever la poussière des surfaces de l'appareil avec un chiffon sec. Ne jamais utilliser de solvants de benzine ou d'alcool car ils abîmeraient le fini des surfaces.

AXC12
AX15
AXC15

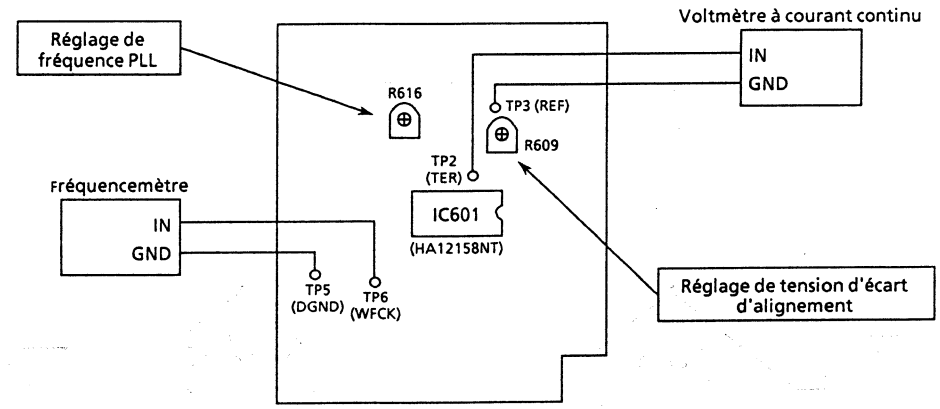
3. SECTION LECTEUR DE DISQUE COMPACT

• Points de Réglage

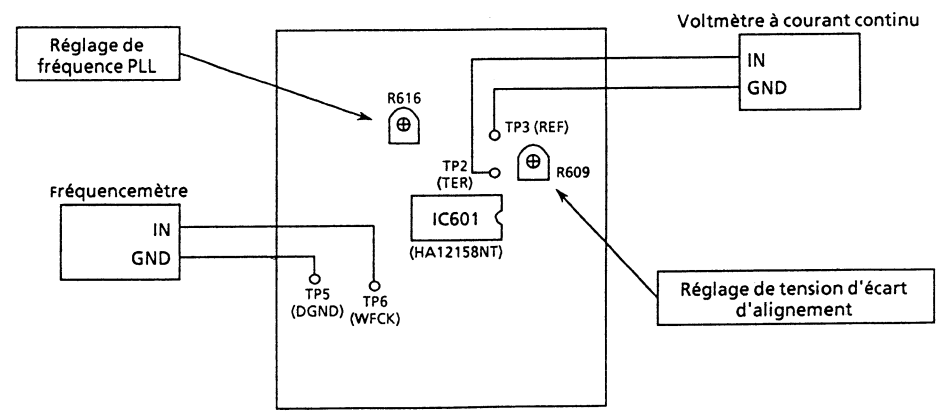
ATTENTION

Ne pas modifier le réglage des résistances ou des commandes précalées qui ne font pas l'objet d'une description dans les réglages de ce lecteur CD car ceci pourrait se traduire par un risque d'exposition à des radiations dangereuses.

(HTC-15)



(HTC-C15)



1. **Préparatifs**
   (1) Mettre sous tension et choisir la fonction "CD".
   (2) Commander l'ouverture du plateau de CD.

Procédure de réglage
(1) Calage de la tension d'écart d'alignement
Ajuster R609 de telle sorte que la tension obtenue à TP2 (TER) se situe dans les limites de 0 + 5 mV.

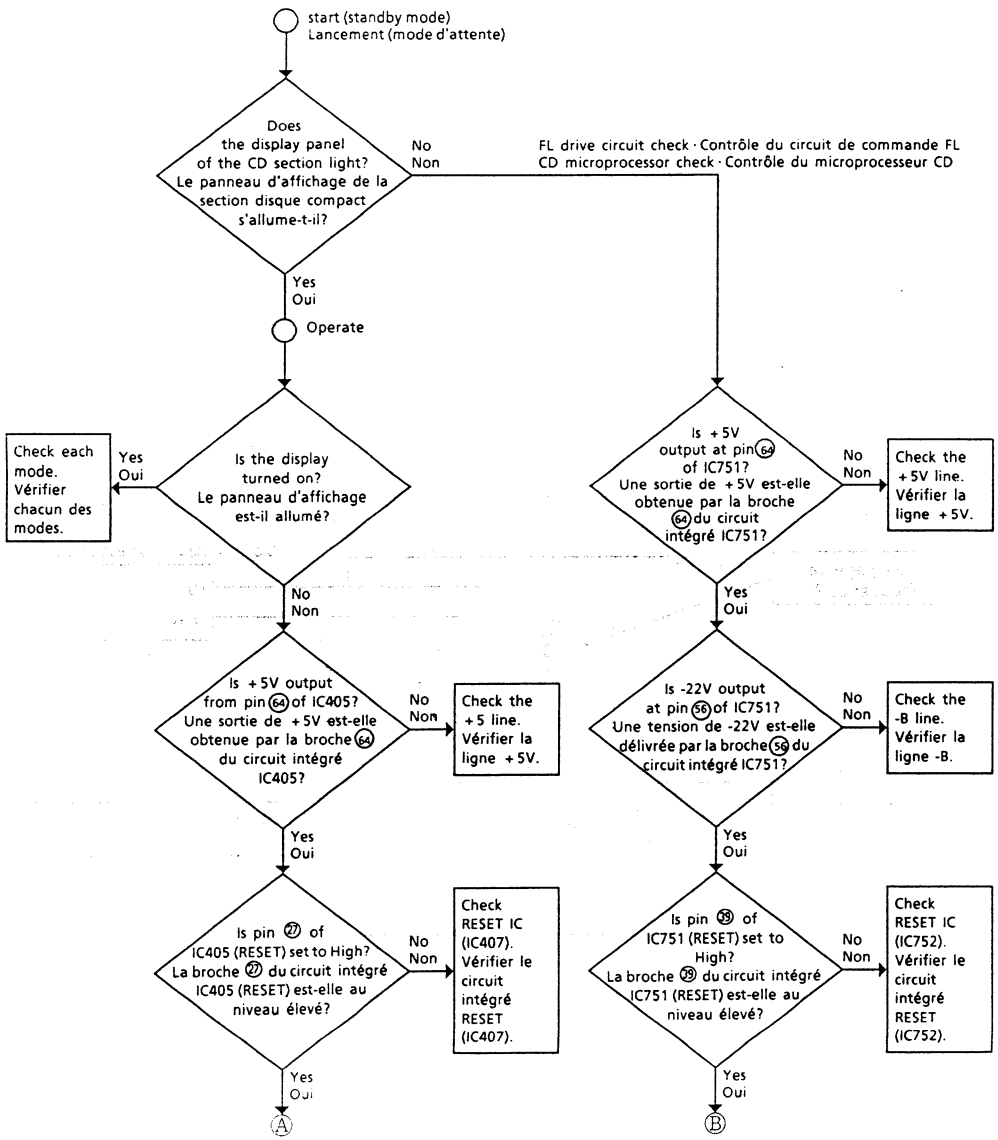
(2) Calage de la fréquence PLL Ajuster R616 de telle sorte que la fréquence obtenue à TP6 (WFCK) se situe dans les limites indiquées ci-dessous.

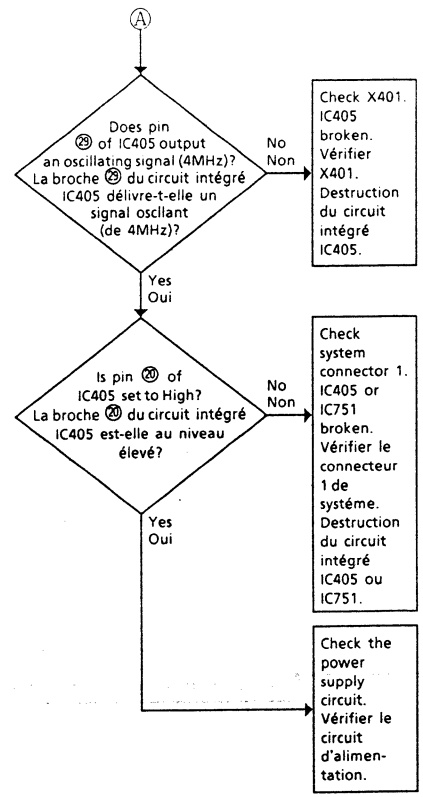
Modèle	Fréquence PLL
AX-15	7.90 ± 0.05kHz
AX-C15	7.90 ± 0.05kHz

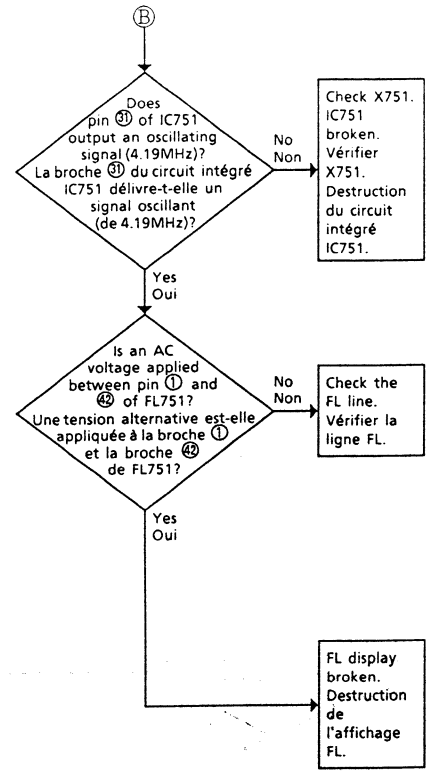
TROUBLESHOOTING · RECHERCHE DE PANNES

1. System check · Vérification de système

Connect the AC plug and system connectors 1 and 2, and turn the power switch on.
Brancher la prise d'alimentation secteur et les connecteurs de système 1 et 2 puis mettre sous tension avec l'interrupteur d'alimentation.







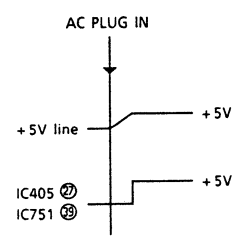
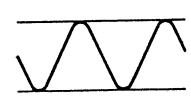


Fig 1



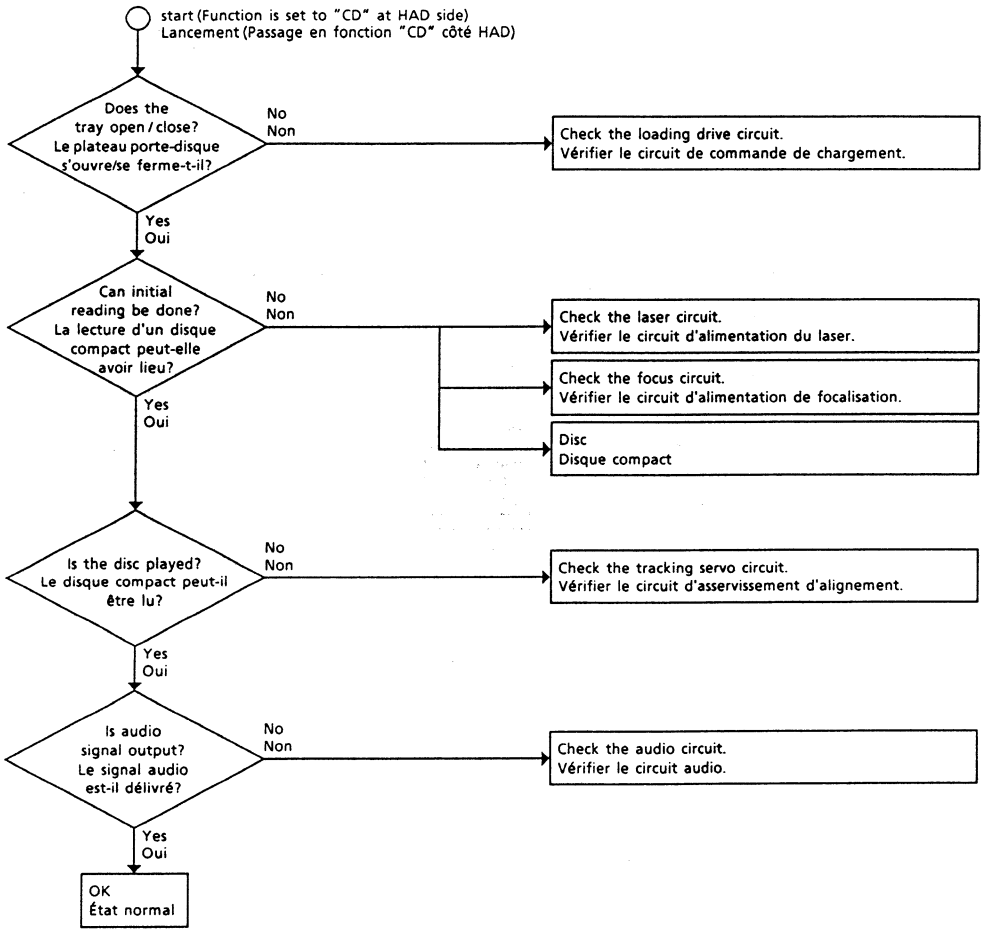
AC 4.2V

Fig 2

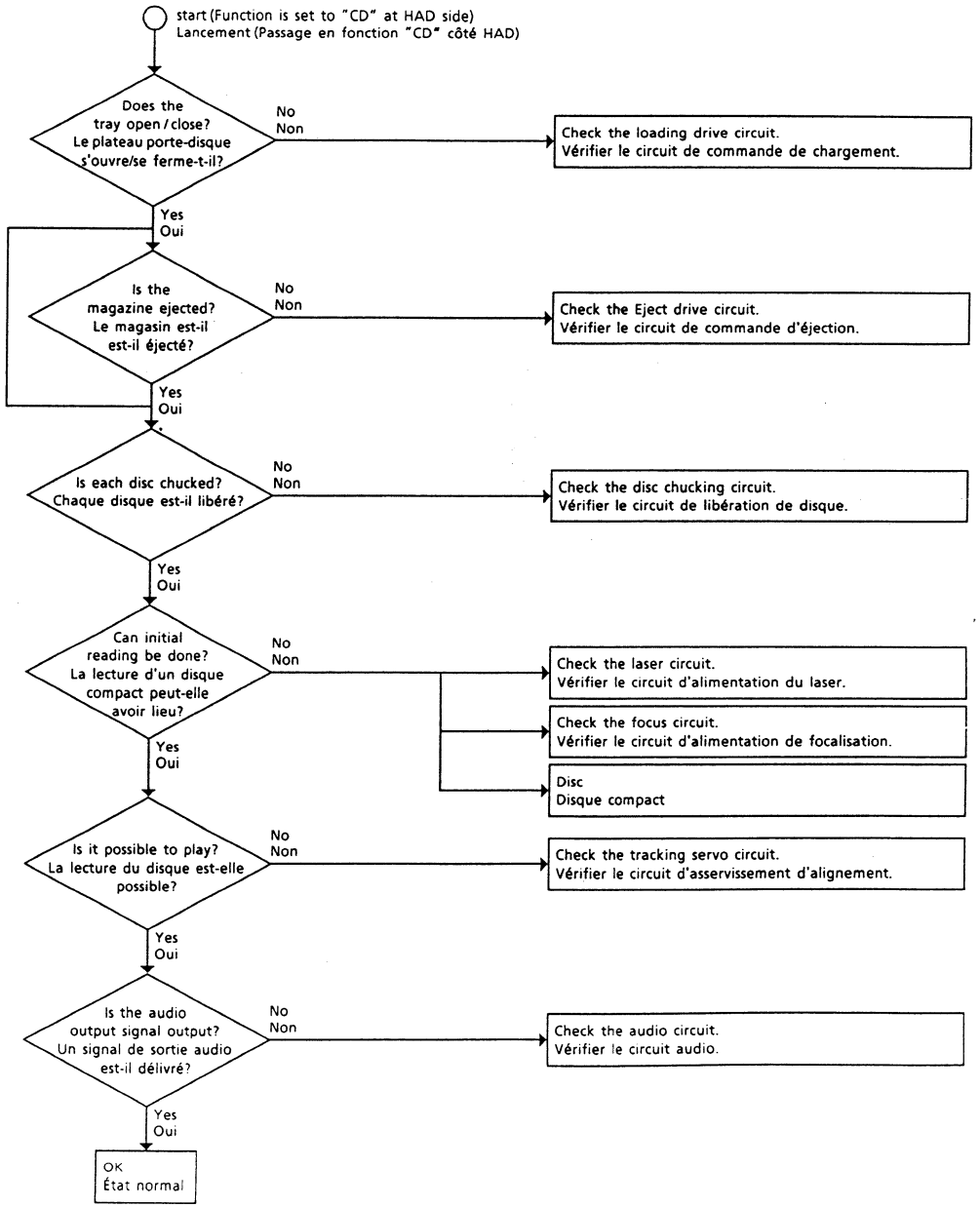
AXC12
AX15
AXC15

2. CD section ·Étage de lecteur de disque compact

HTC-15

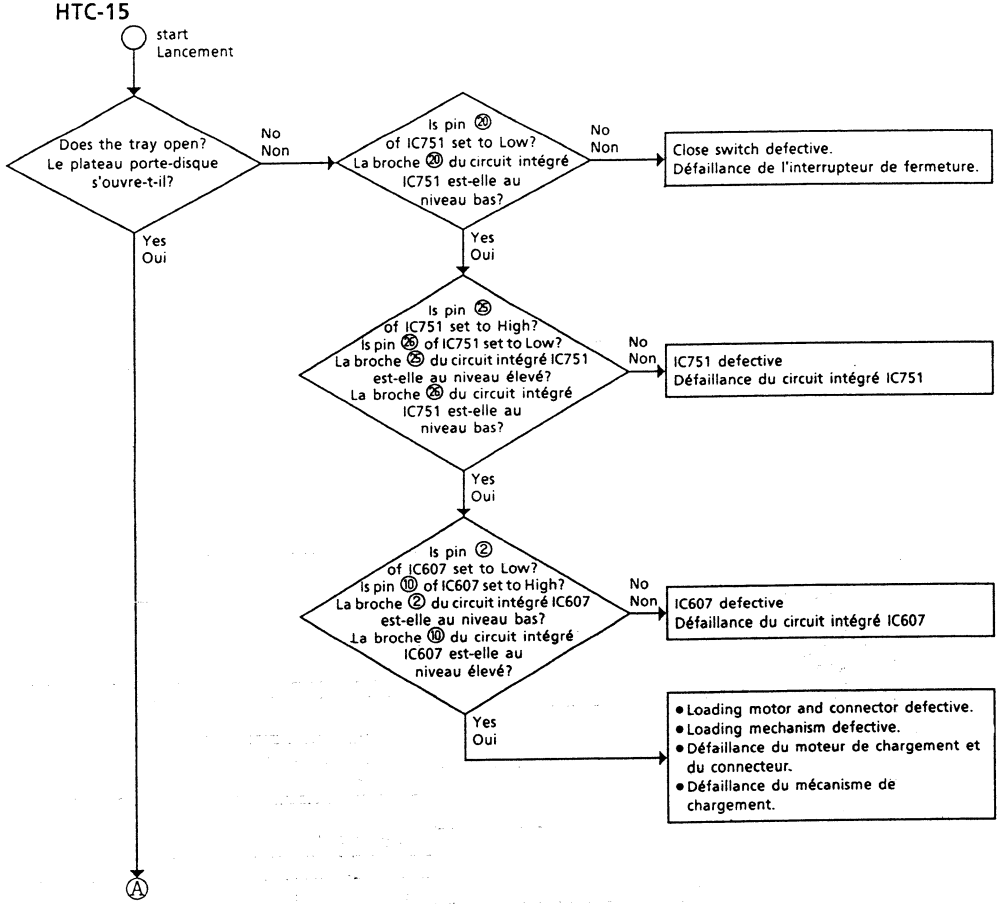


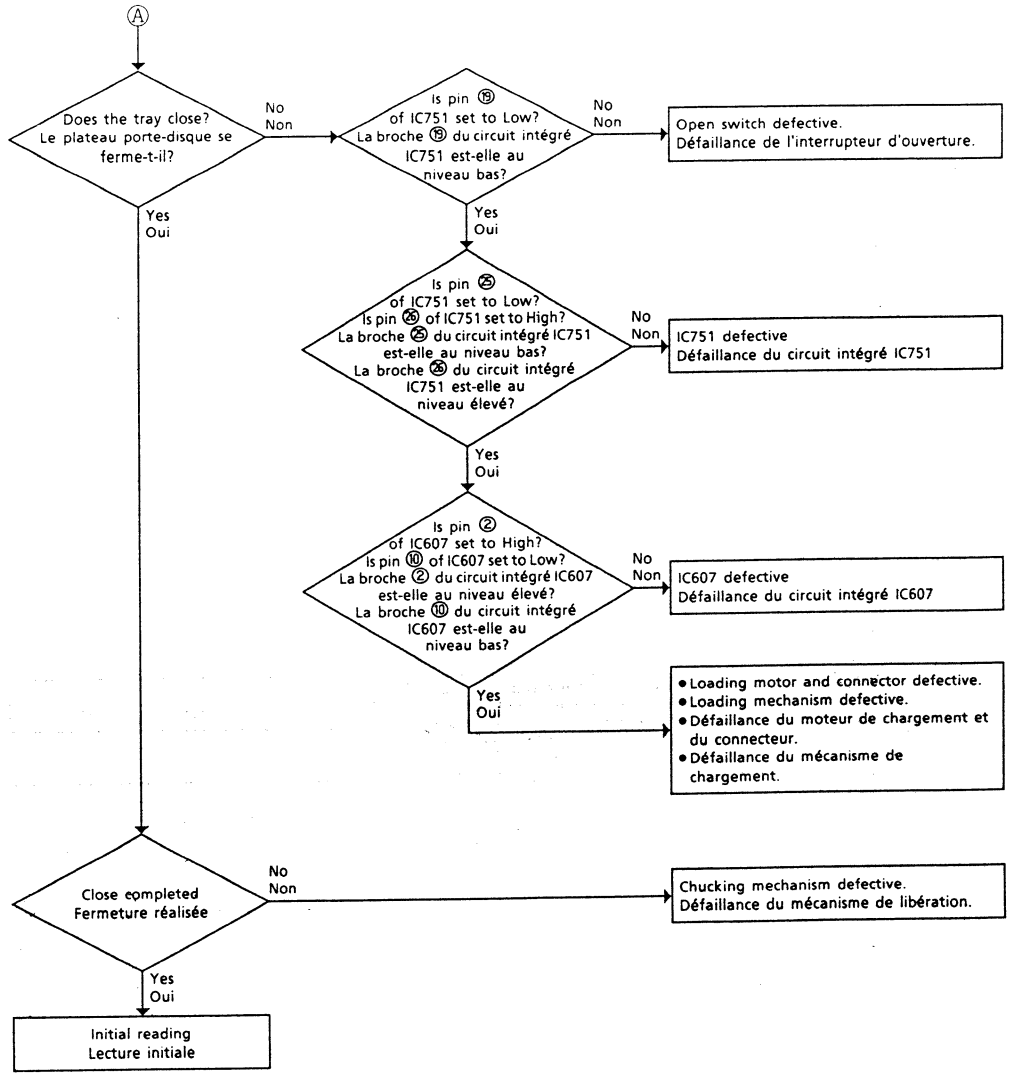
HTC-C15



2-1 When the tray does not operate correctly
Lorsque le plateau porte-disque ne fonctionne pas correctement

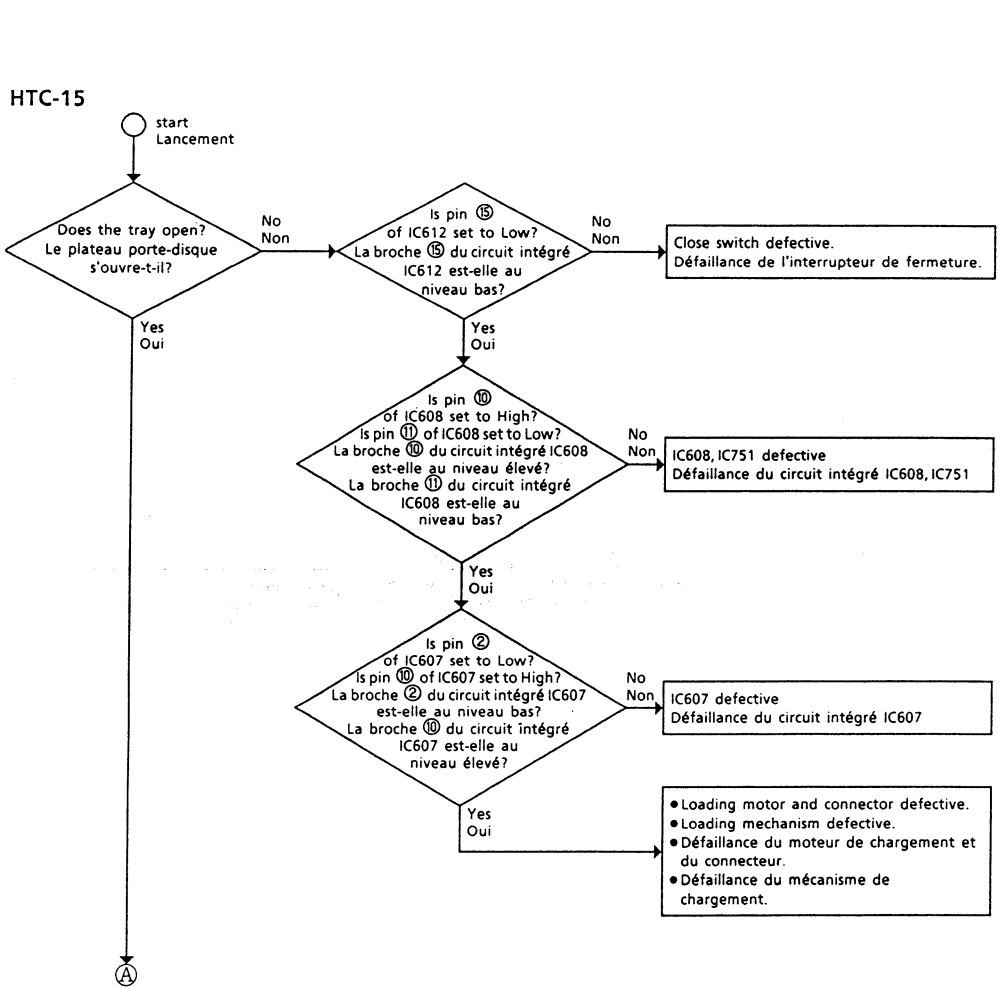
HTC-15

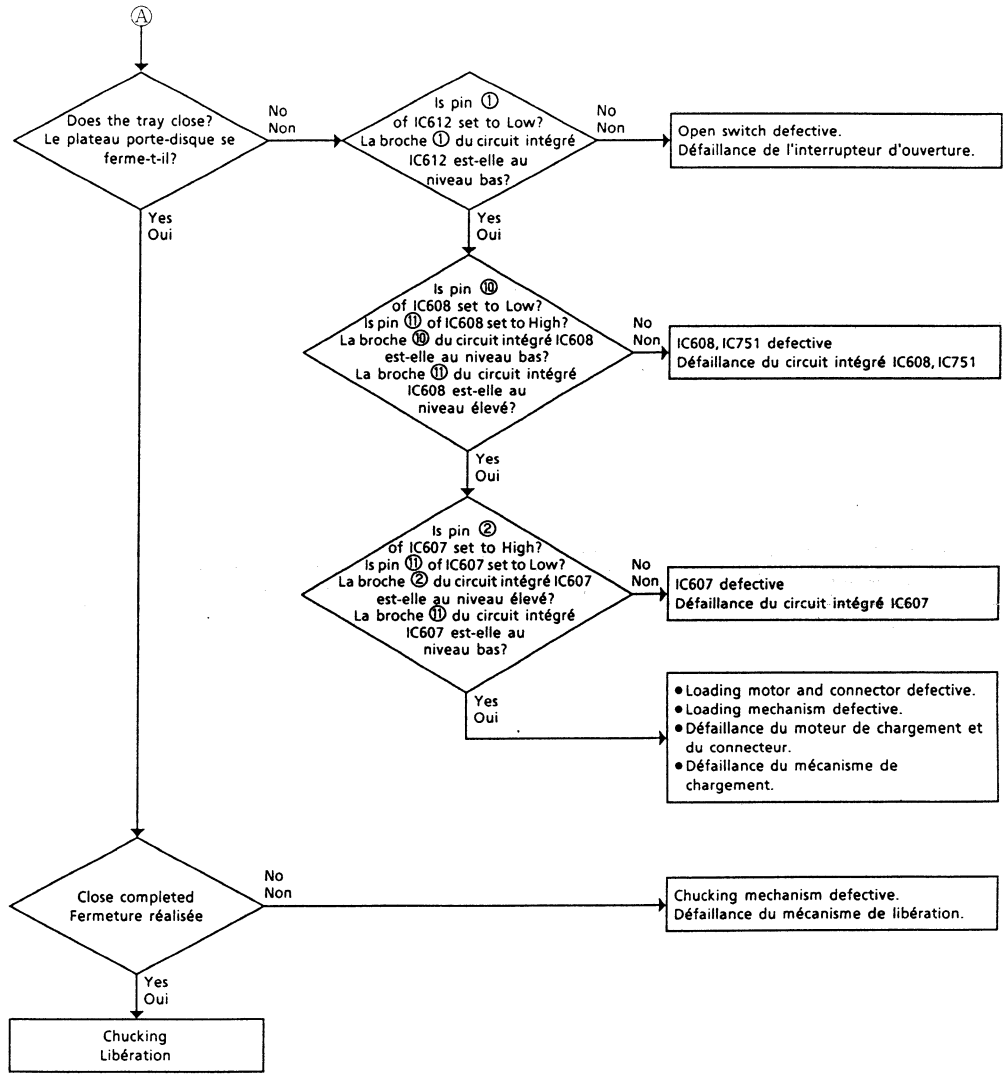




AX12
AXC12
AX15
AXC15

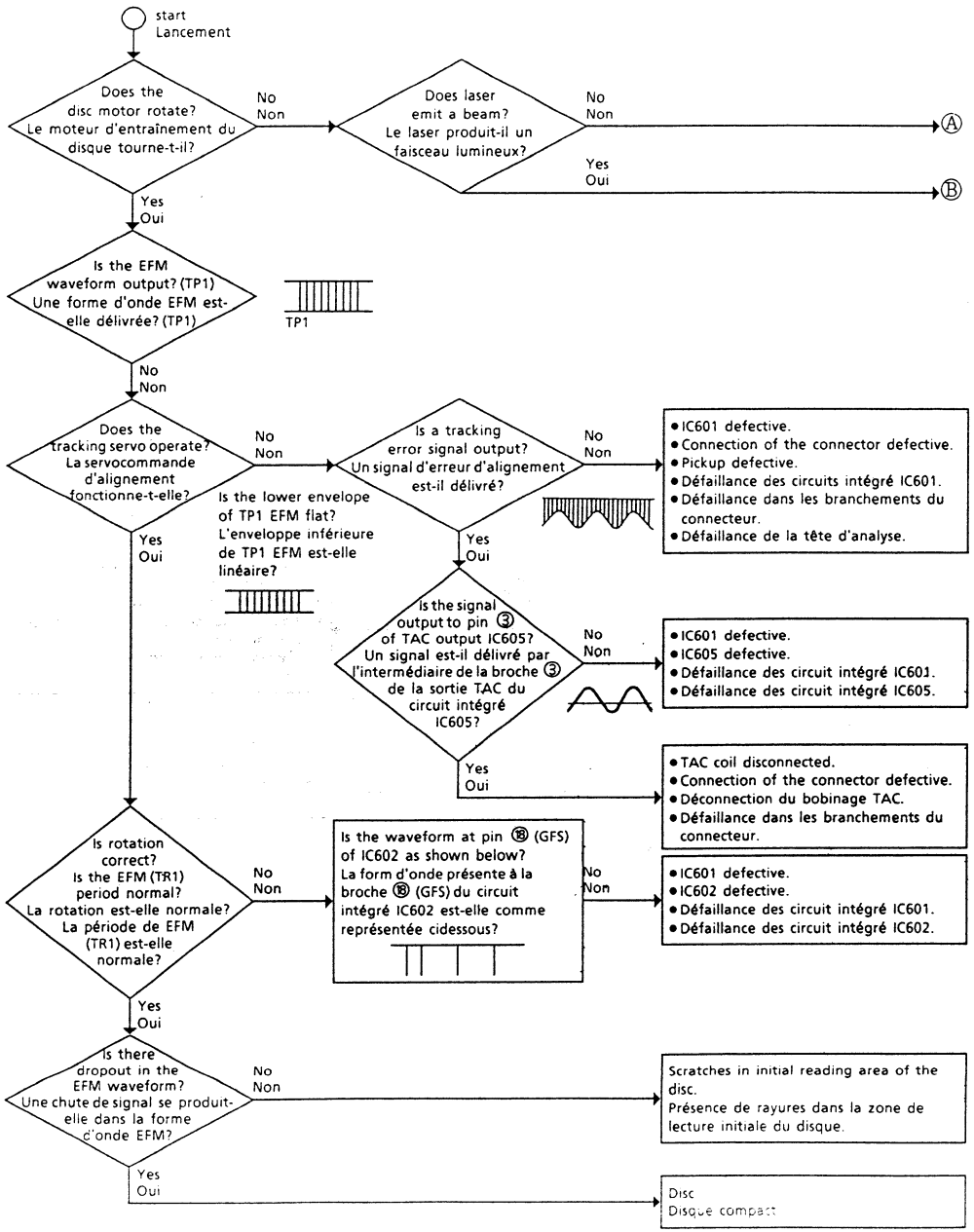
HTC-15

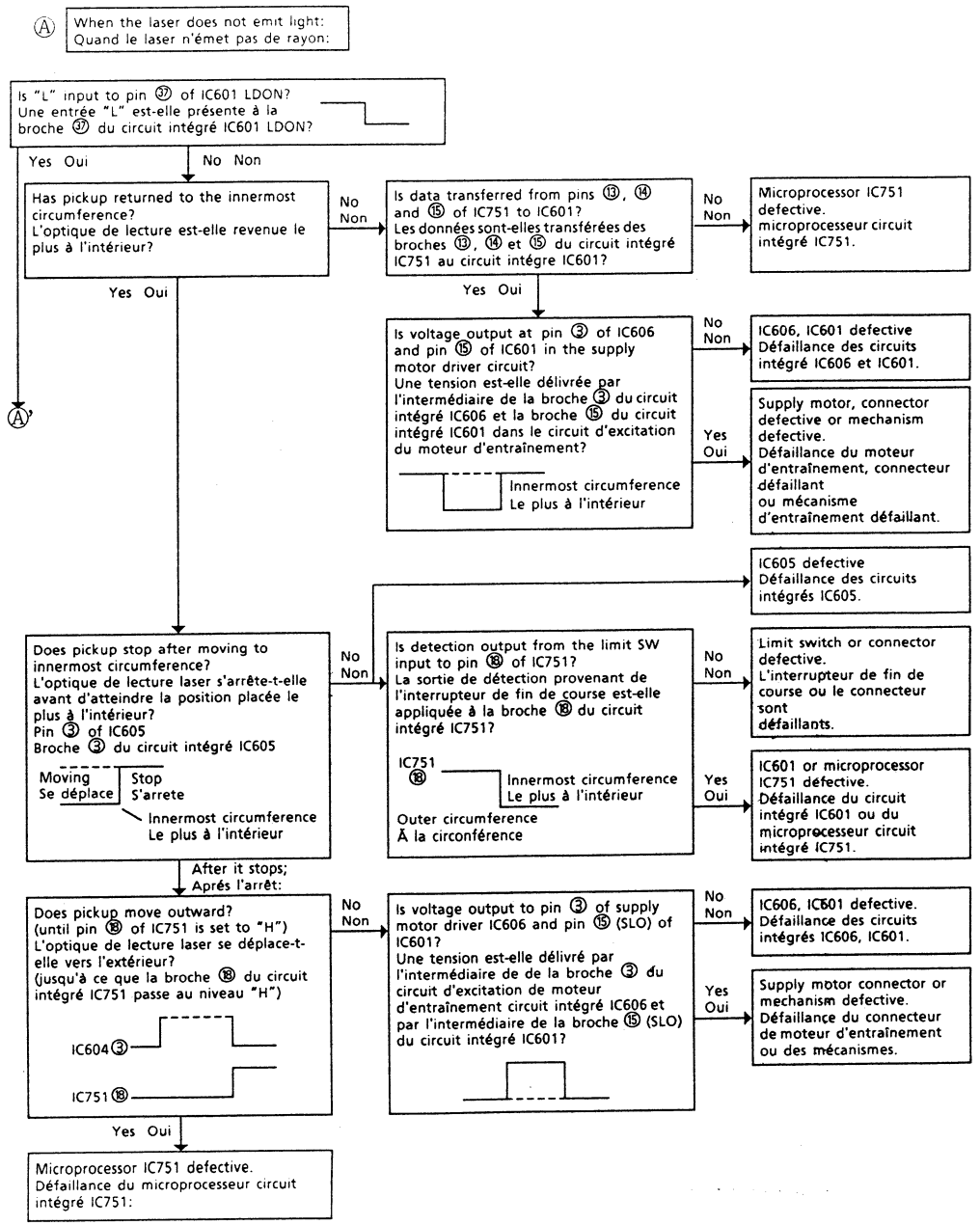




2-2 When initial reading is impossible

Lorsque la lecture initiale ne peut pas avoir lieu





AX12
AXC12
AX15
AXC15

Ⓐ'

Is about 3.5V voltage generated at pin ㊾ (LD) IC601 with pin ㊲ (LDON) of IC601 set to"L"?
Une tension d'environ 3.5V est-elle produite à la broche ㊾ (LD) du circuit intégré IC601 quand la broche ㊲ (LD ON) du circuit intégré IC601 est à niveau "L"?

No Non → IC601 and peripheral circuits defective.
Le circuit intégré IC601 et ses circuits périphériques sont défaillants.

Yes Oui

Is power of laser supplied to Q601?
Voltage at Q601 connector is about 1.8V.
Le courant d'alimentation du laser est-il est appliqué à Q601?
La tension présente au connecteur Q601 est d'environ 1.8V.

No Non → Laser switch or connector defective.
Défaillance de l'interrupteur de laser ou du connecteur.

Yes Oui

Does laser current flow?
Is voltage between both ends of R601 about 1.0V?
Le courant d'alimentation du laser circule-t-il?
La tension mesurée entre les deux extrémités de R601 est-elle égale à 1.0V environ?

No Non →
- R611 ◀ 1.0V → Yes Oui → Q601 defective, Connector disconnected or laser disconnected.
Défaillance de Q601.
Le connecteur est déconnecté ou le laser est déconnecté.
- R611 ▶ 1.0V → Yes Oui → Laser broken, connector defective or short-circuit, etc.
Rupture de laser, défaillance de connecteur ou court-circuit, etc.

Ⓑ When the laser emits light:
Lorsque le laser émet un rayon lumineux:

Does lens move up and down?
L'optique de lecture laser est-elle capable de se mouvoir dans le plan vertical?

No Non → Is focus search signal output from IC601?
Le signal de recherche de faisceau lumineux de focalisation est-il délivré par le circuit intégré IC601?

Pin ⑳ of IC601 (FEO)
Broche ⑳ de circuit intégré IC601 (FEO)

No Non → IC601 defective.
Défaillance du circuit intégré IC601.

Yes Oui

Is focus search signal output to pin ⑨ of IC605?
Le signal de recherche de faisceau lumineux de focalisation est-il délivré par l'intermédiaire de la broche ⑨ du circuit intégré IC605?

No Non → IC605 defective.
Défaillance du circuit intégré IC605.

Yes Oui → Actuator disconnection.
Connector disconnection.
Déconnection du circuit d'excitation.

Yes Oui

When checking the initial reading with disc loaded:
Au moment d'effectuer la lecture initiale avec un disque compact en place:

Is TP1 (EFM) signal output even at the low level?
Le signal TP1 (EFM) est-il délivré malgré un niveau réduit?

No Non → Connector disconnection.
IC601 defective.
Débranchement de connecteur.
Défaillance du circuit intégré IC601.

Yes Oui

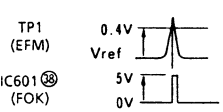
Is laser output adjustment properly?
Ist der Laser-Ausgang richtig eingestellt?
Le niveau de sortie du laser est-il réglé correctement?

P601 (EFM)

No Non → Improper turntable height.
Laser diode degraded.
Réglage anormale de hauteur du plateau tourne-disques.
Usure de la diode de laser.

Yes Oui

Is FOK (Focus OK) signal Output?
[EFM (between TP1 and TP2)]
Le signal FOK (focalisation normale) est-il délivré?



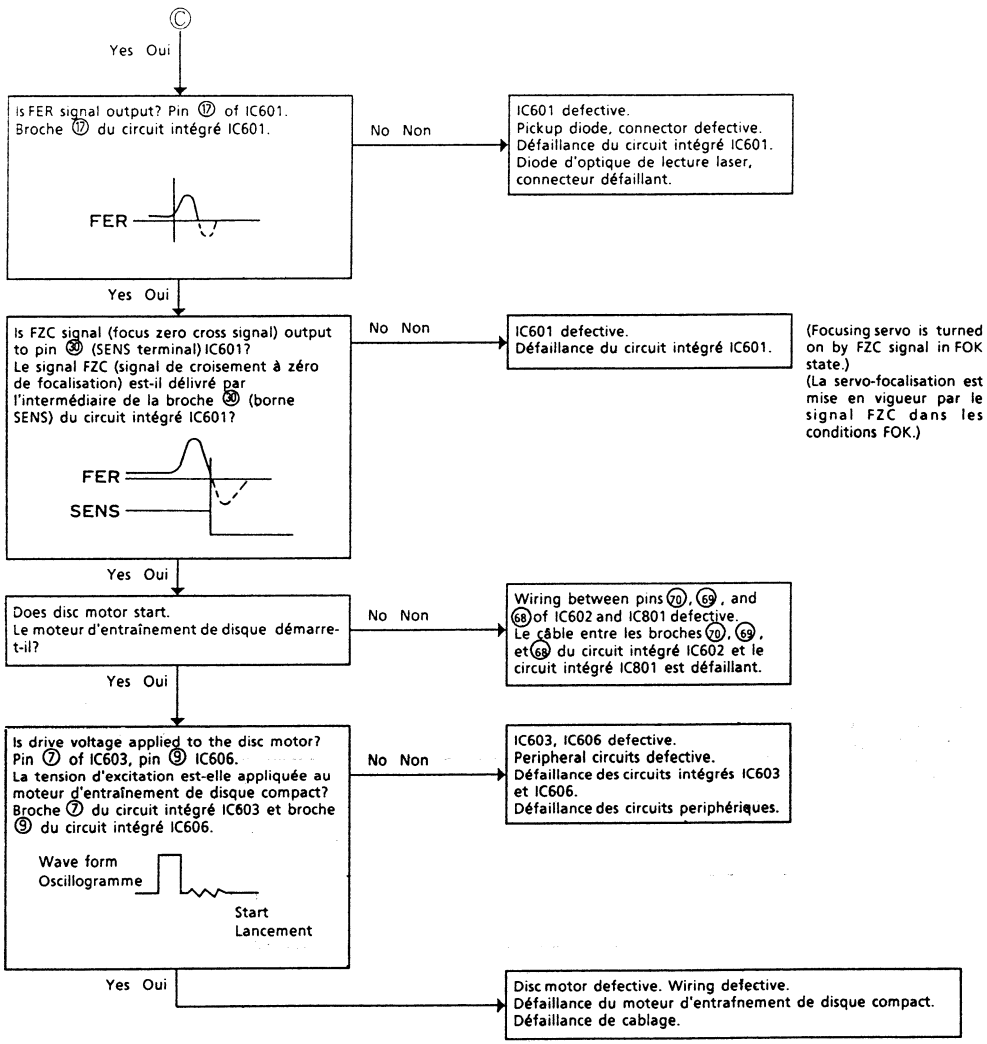
No Non → IC601 defective.
Défaillance du circuit intégré IC601.

Yes Oui

Is FOK signal input to pin ㉑ of microprocessor IC751?
Le signal FOK est-il appliqué à la broche ㉑ du microprocesseur circuit intégré IC751?

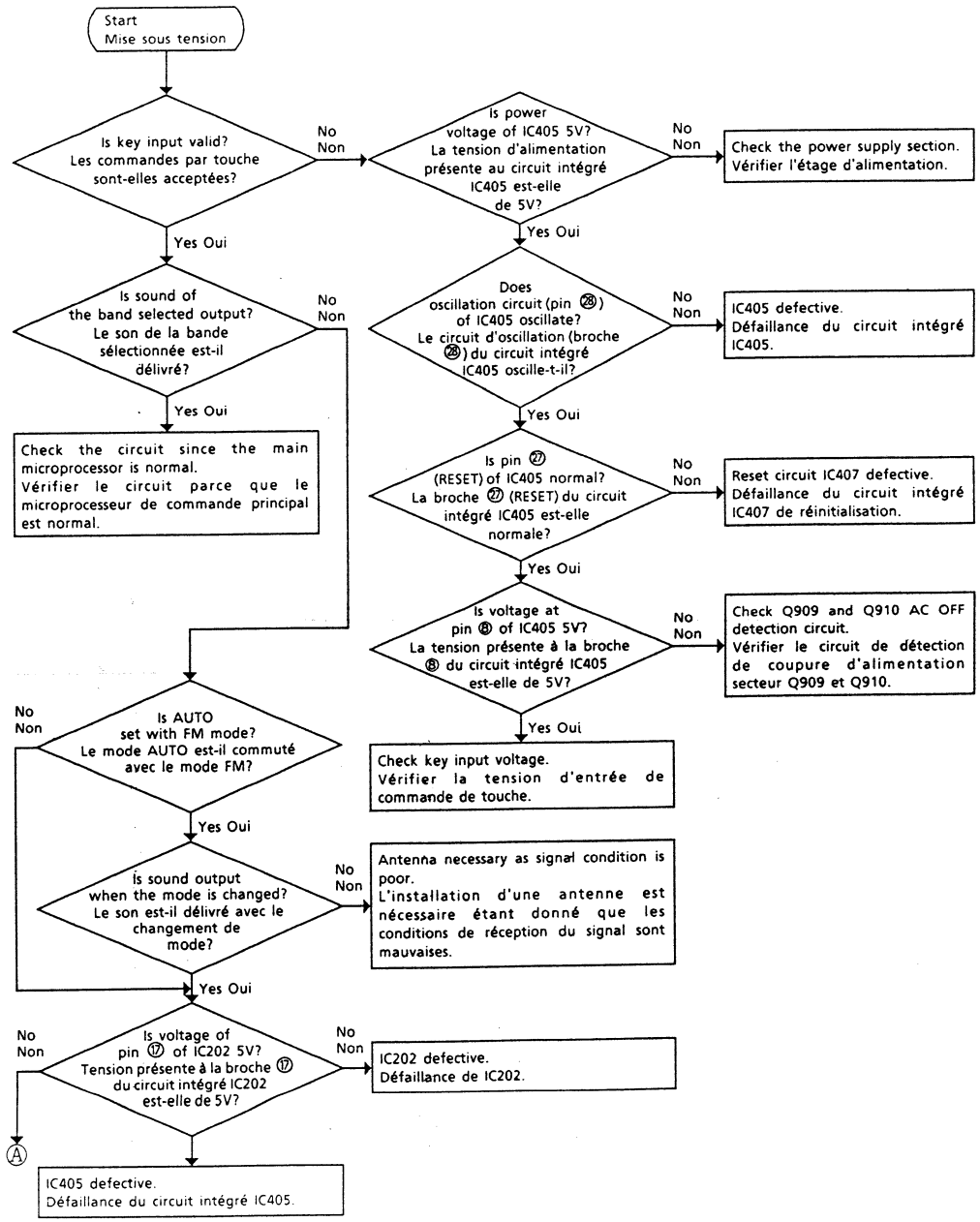
No Non → Pattern disconnected.
Rupture dans la carte de circuits imprimés.

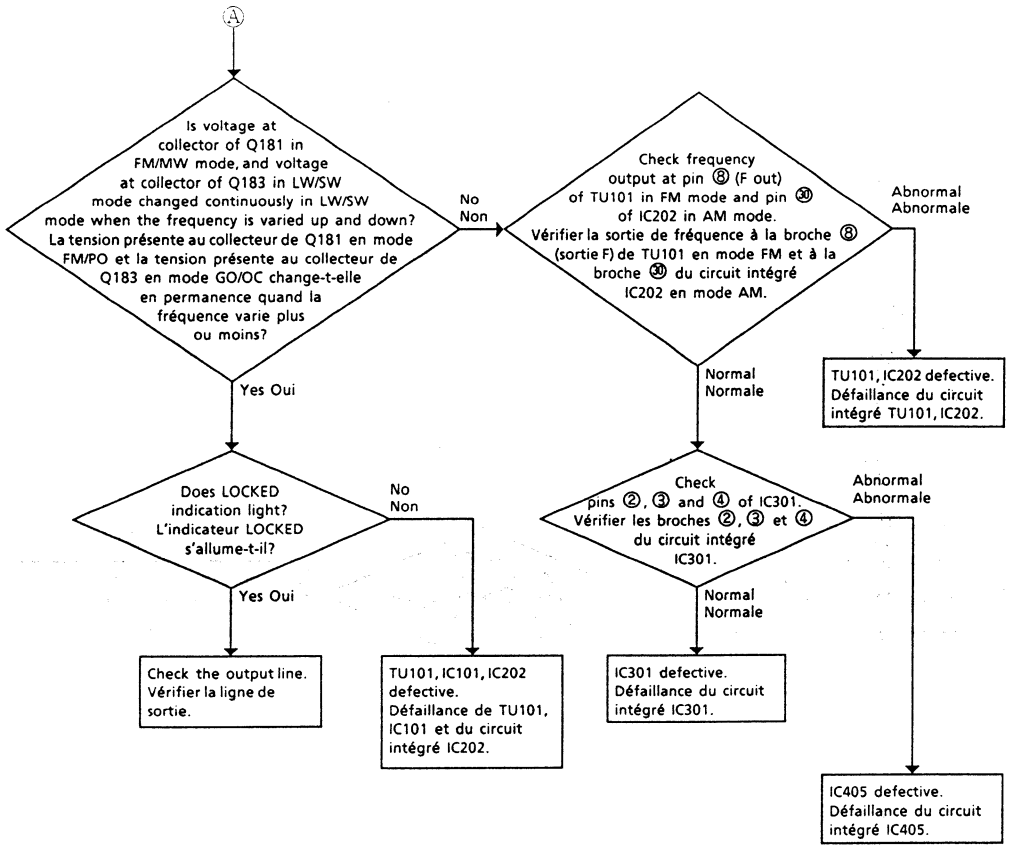
Yes Oui → Ⓒ



3. Tuner section · Étage syntoniseur

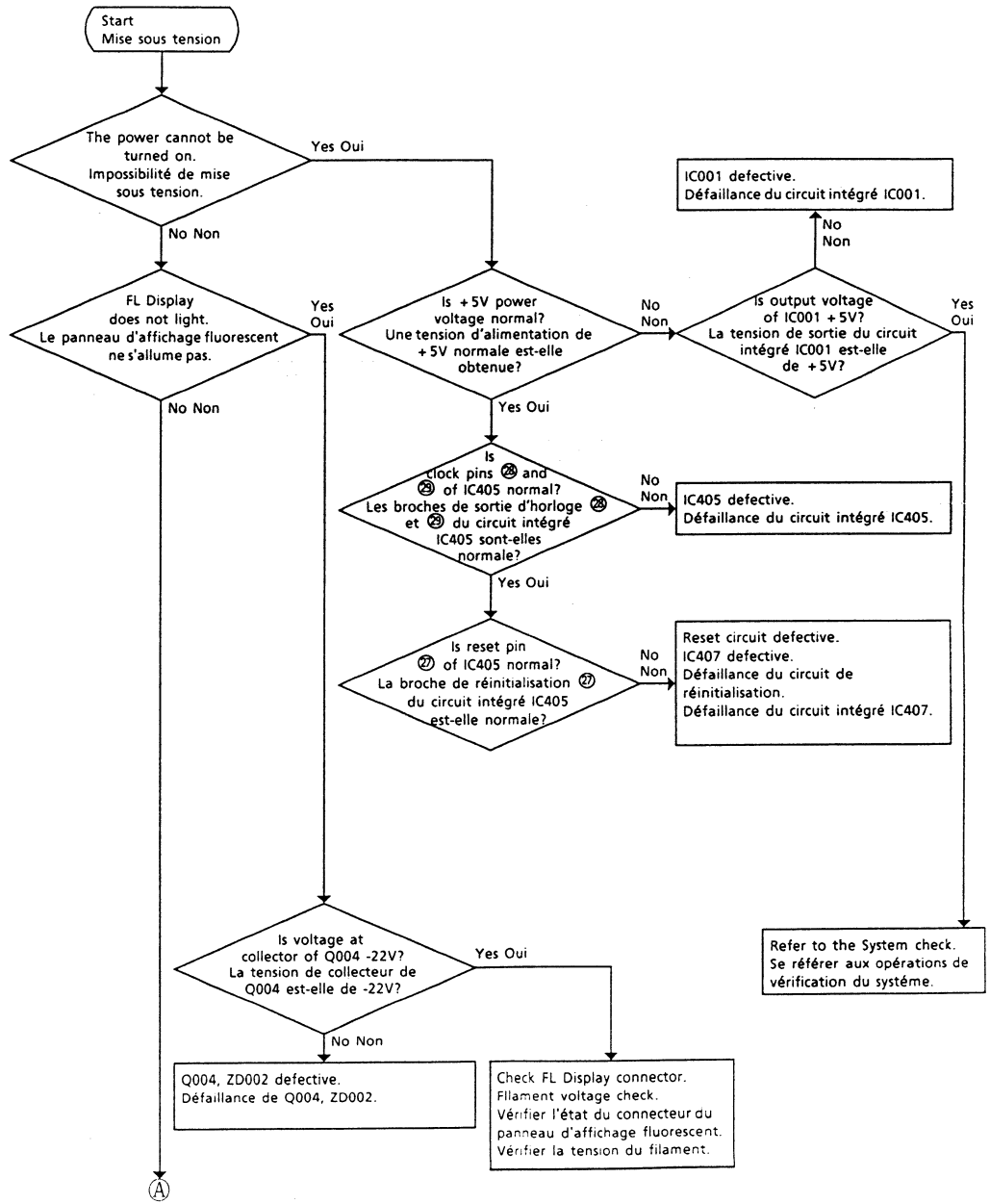
Function : Tuner position . Conditions de fonctionnement : position syntoniseur

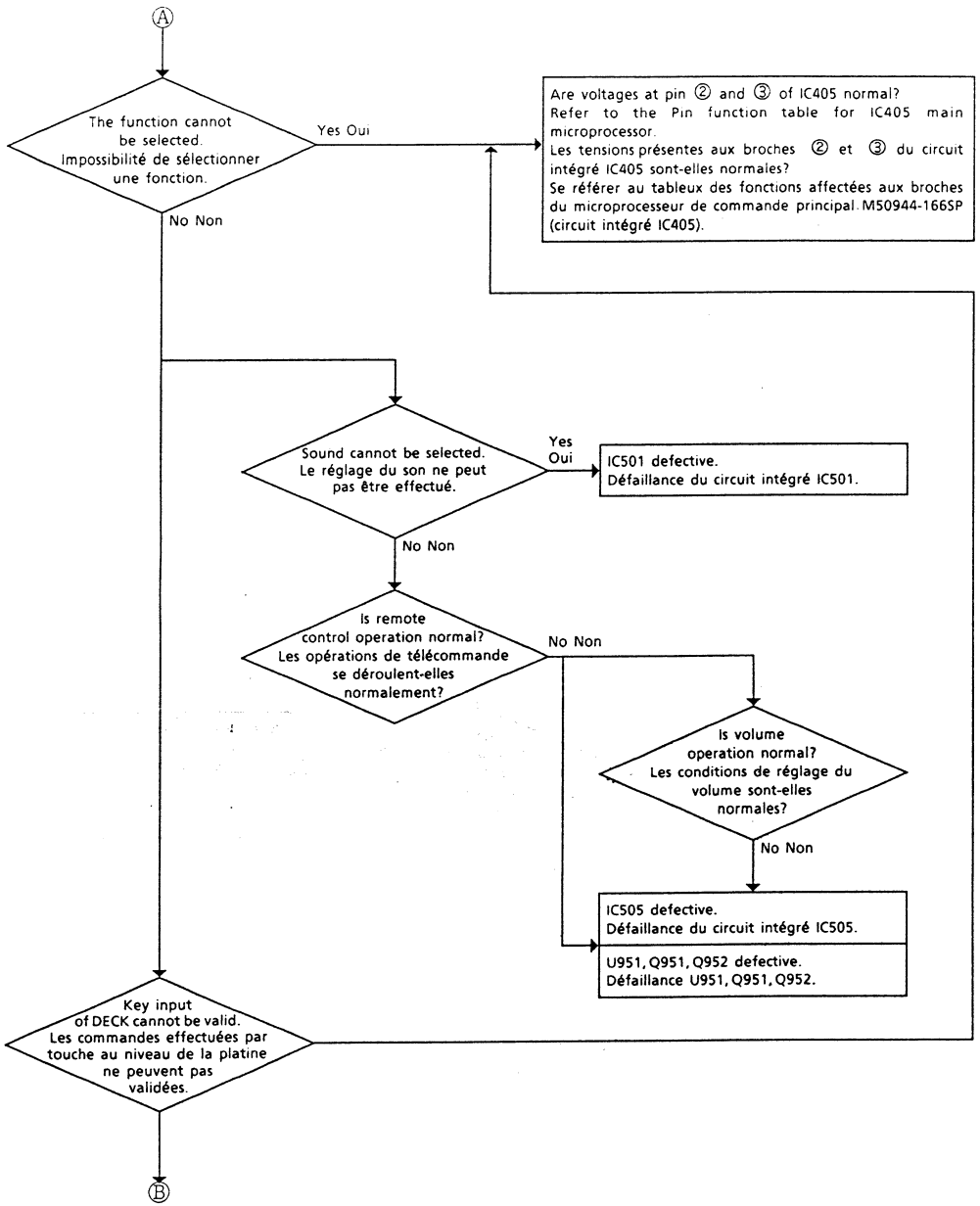


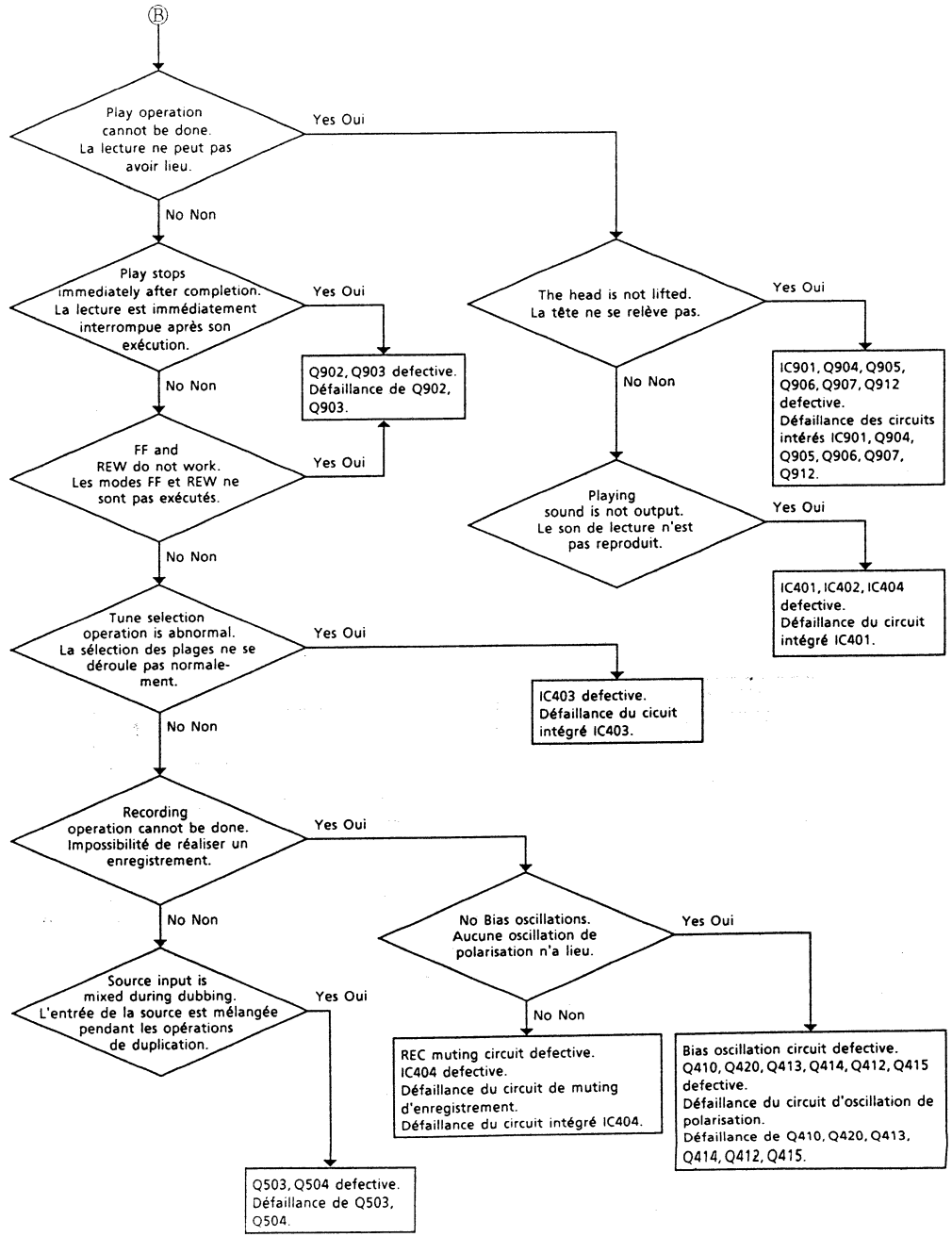


AX12
AXC12
AX15
AXC15

4. Deck/amplifier section · Étage platine/amplificateur




Ⓐ
The function cannot be selected.
Impossibilité de sélectionner une fonction.
Yes Oui
No Non
Are voltages at pin ② and ③ of IC405 normal?
Refer to the Pin function table for IC405 main microprocessor.
Les tensions présentes aux broches ② et ③ du circuit intégré IC405 sont-elles normales?
Se référer au tableux des fonctions affectées aux broches du microprocesseur de commande principal. M50944-166SP (circuit intégré IC405).
Sound cannot be selected.
Le réglage du son ne peut pas être effectué.
Yes Oui
IC501 defective.
Défaillance du circuit intégré IC501.
No Non
Is remote control operation normal?
Les opérations de télécommande se déroulent-elles normalement?
No Non
Is volume operation normal?
Les conditions de réglage du volume sont-elles normales?
No Non
IC505 defective.
Défaillance du circuit intégré IC505.
U951, Q951, Q952 defective.
Défaillance U951, Q951, Q952.
Key input of DECK cannot be valid.
Les commandes effectuées par touche au niveau de la platine ne peuvent pas validées.
Ⓑ

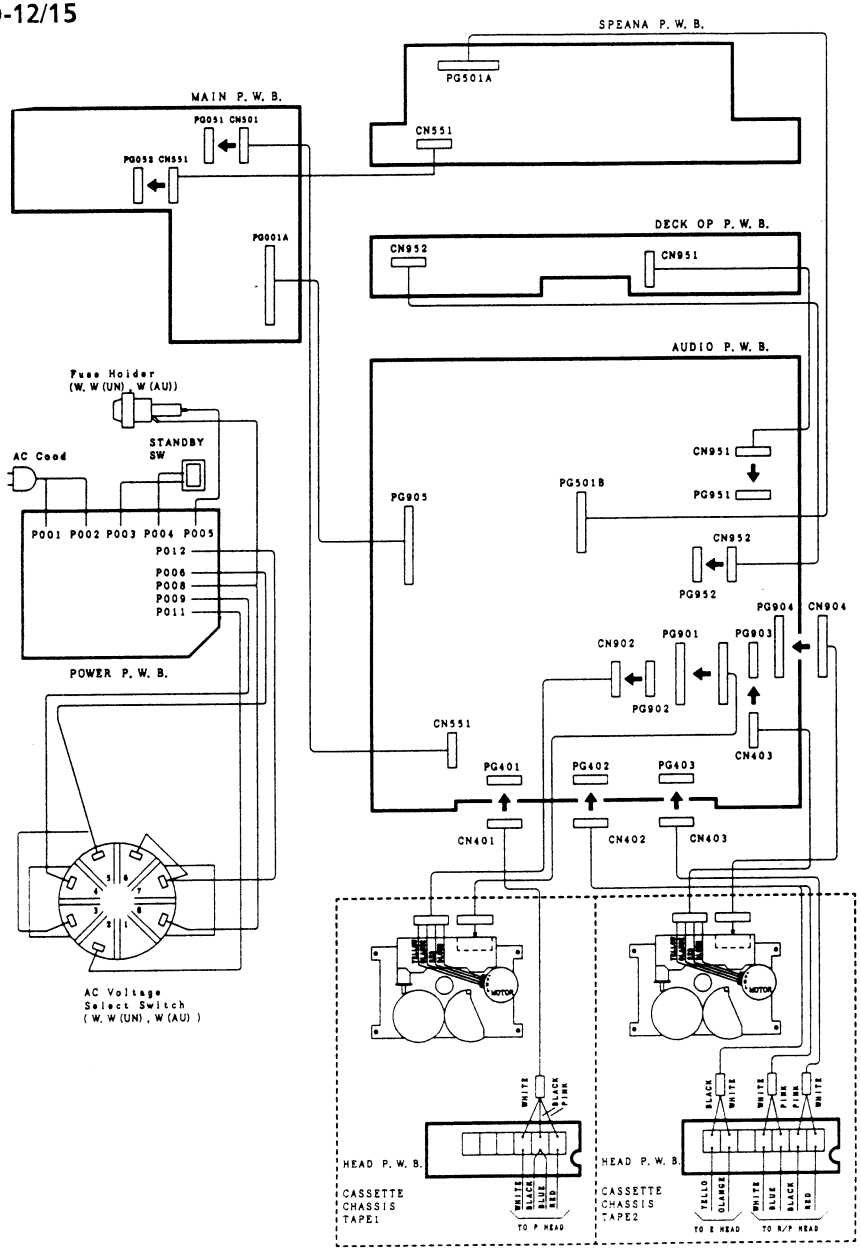

Ⓑ
Play operation cannot be done.
La lecture ne peut pas avoir lieu.
Yes Oui
No Non
Play stops immediately after completion.
La lecture est immédiatement interrompue après son exécution.
Yes Oui
Q902, Q903 defective.
Défaillance de Q902, Q903.
No Non
FF and REW do not work.
Les modes FF et REW ne sont pas exécutés.
Yes Oui
No Non
Tune selection operation is abnormal.
La sélection des plages ne se déroule pas normalement.
Yes Oui
IC403 defective.
Défaillance du cicuit intégré IC403.
No Non
Recording operation cannot be done.
Impossibilité de réaliser un enregistrement.
Yes Oui
No Non
Source input is mixed during dubbing.
L'entrée de la source est mélangée pendant les opérations de duplication.
Yes Oui
Q503, Q504 defective.
Défaillance de Q503, Q504.
No Bias oscillations.
Aucune oscillation de polarisation n'a lieu.
Yes Oui
No Non
REC muting circuit defective.
IC404 defective.
Défaillance du circuit de muting d'enregistrement.
Défaillance du circuit intégré IC404.
Bias oscillation circuit defective.
Q410, Q420, Q413, Q414, Q412, Q415 defective.
Défaillance du circuit d'oscillation de polarisation.
Défaillance de Q410, Q420, Q413, Q414, Q412, Q415.
The head is not lifted.
La tête ne se relève pas.
Yes Oui
No Non
IC901, Q904, Q905, Q906, Q907, Q912 defective.
Défaillance des circuits intérés IC901, Q904, Q905, Q906, Q907, Q912.
Playing sound is not output.
Le son de lecture n'est pas reproduit.
Yes Oui
IC401, IC402, IC404 defective.
Défaillance du circuit intégré IC401.

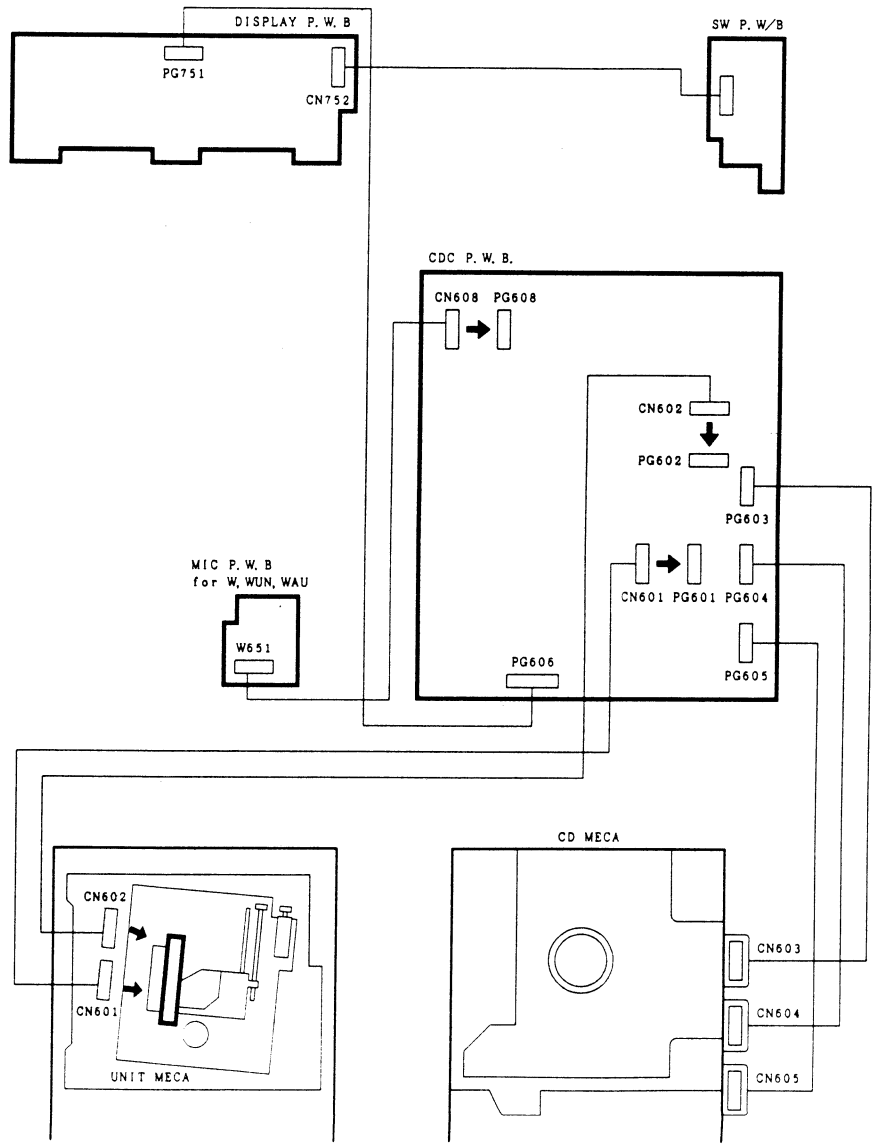
AX12
AXC12
AX15
AXC15

WIRING DIAGRAM · SCHEMA DE CABLAGE

HTC-C15

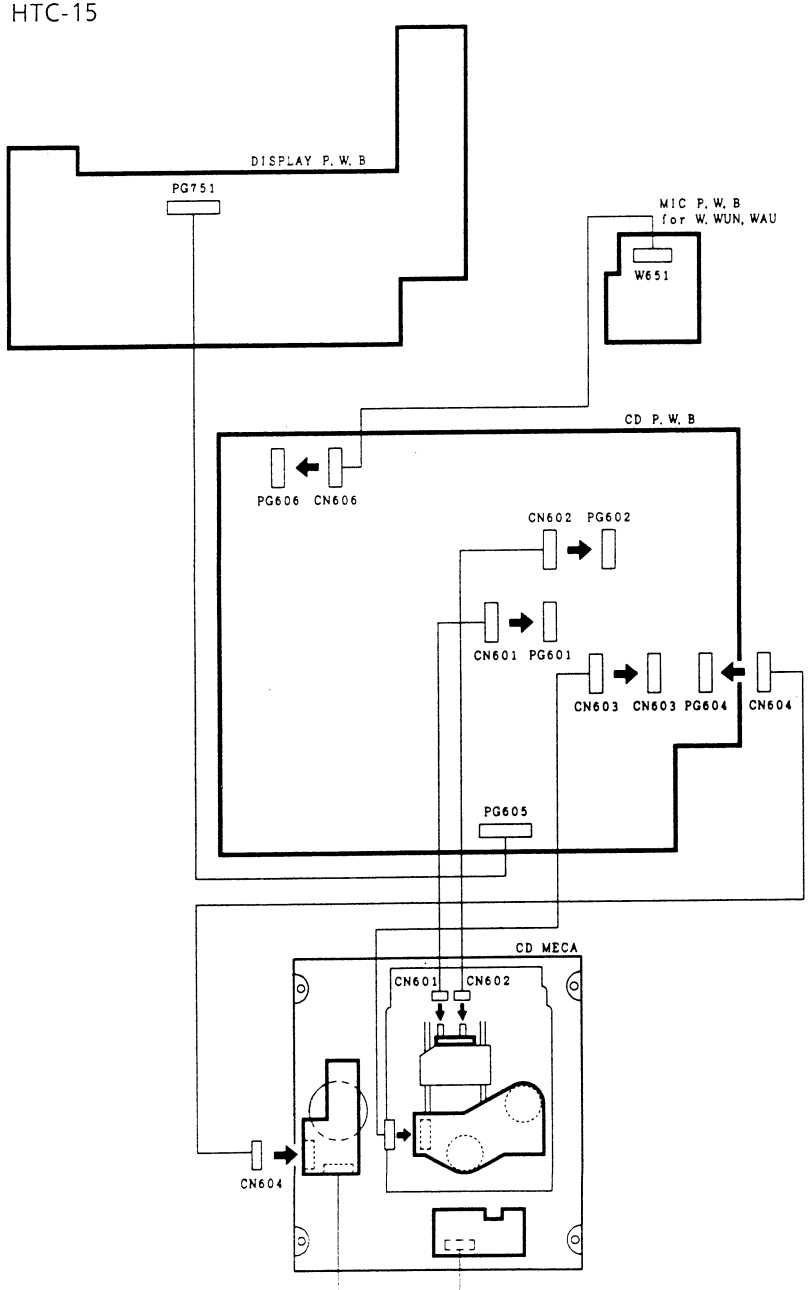
HAD-12/15





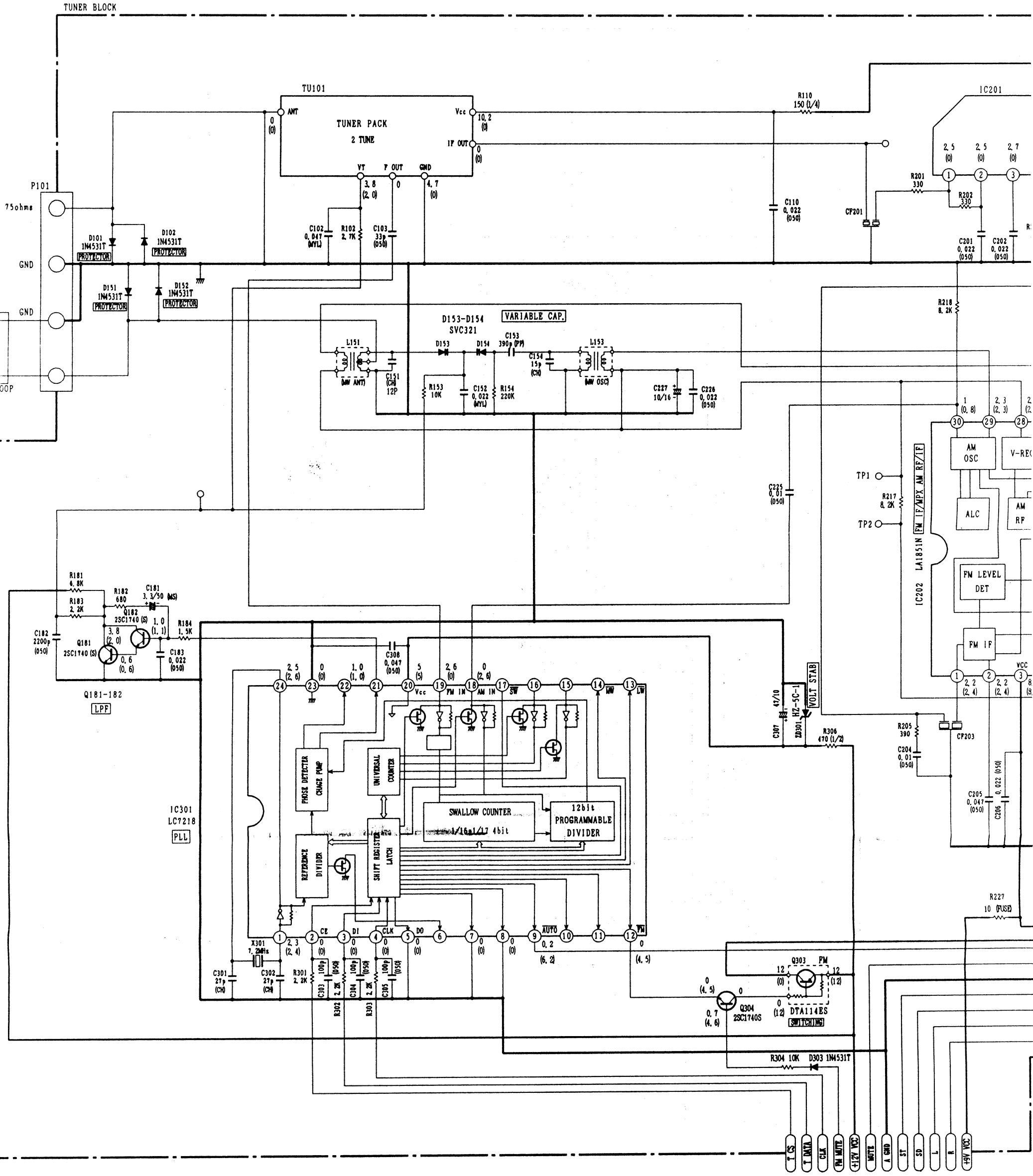
AX12
AXC12
AX15
AXC15

HTC-15



CIRCUIT DIAGRAM · DIAGRAMME DES CIRCUIT

TUNER BLOCK(For UC)



No Mark FM
( ) MW

IC201 AN278 FM IF

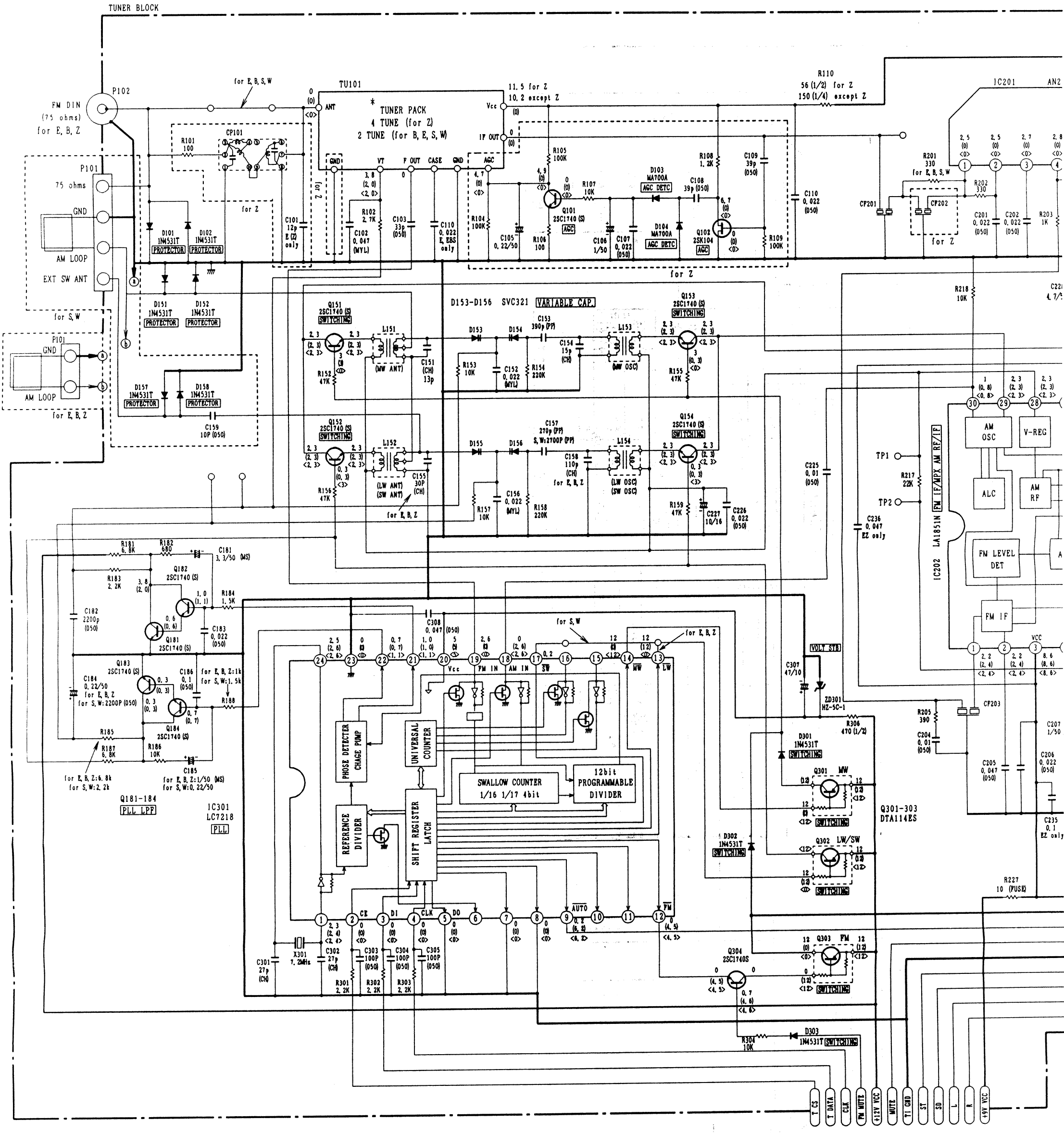
IC202 LA1851N FM IF/MPX AM RF/IF

AM OSC | V-REG | AM MIX | AM IF | LED DRIVE | TRIG | ALC | AM RF | AM DET | IF BUFF | F. F 19KHz | F. F 19KHz | ST SW | FM LEVEL DET | AGC | COMP | P. D | VCO | F. F 38KHz | MUTE | (6dB) | FM IF | FM DET | PILOT DET | DECODER

R110 150 (1/4)
C110 0. 022 (050)
CF201
R201 330
R202 330
R203 1K
R204 1. 5K
C201 0. 022 (050)
C202 0. 022 (050)
C203 0. 022 (050)
R218 8. 2K
C228 4. 7/50
T201 AM IFT
C229 0. 022 (050)
R220 10K
R231 1K
R219 33K
R222 1K
R307 100K
R223 10K
C230 0. 047 (050)
R226 8. 2K
R224 15K
R225 1K
C227 10/16
C226 0. 022 (050)
C225 0. 01 (050)
TP1
TP2
R217 8. 2K
C307 47/10
ZD301 HZ-5C-1
VOLT STAB
R306 470 (1/2)
R205 390
C204 0. 01 (050)
CF203
C205 0. 047 (050)
C206 0. 022 (050)
C207 1/50
C208 0. 0068 (050)
C209 0. 022 (050)
R206 12K
T202 FM DISCRI
R207 8. 2K
C233 33P (050)
C234 0. 022 (050)
C211 10/25
R209 5. 1K
C212 1/50
C213 0. 33/50
X201 456KHz
R210 1. 8K
R212 5. 6K
C216 0. 022 (050)
R211 5. 6K
C215 0. 022 (050)
R213 1K
R214 1K
C219 10/16
T204
R215 8. 2K
C217 0. 01 (050)
C221 0. 0047 (050)
R228 4. 7K
C220 10/16
T205
R216 8. 2K
R229 4. 7K
C218 0. 01 (050)
C222 0. 0047 (050)
Q201 DTA114ES
R230 3. 3K
C232 1/50
Q202 DTC124ES
SWITCHING
R305 10K
R227 10 (FUSE)
C231 47/16
Q303 FM
Q304 2SC1740S
DTA114ES
SWITCHING
R304 10K
D303 1N4531T

T CS | T DATA | CLK | FM MUTE | +12V VCC | MUTE | A GND | ST | SD | L | R | +9V VCC

TUNER BLOCK(Except UC)



No Mark FM
( ) MW
< > LW/SW

IC201 AN278 FM IF

IC202 LA1851N FM IF/MPX AM RF/IF

AM OSC, V-REG, AM MIX, AM IF, LED DRIVE, TRIG, ALC, AM RF, AM DET, IF BUFF, F.F 19KHz, F.F 19KHz, ST SW, FM LEVEL DET, AGC, COMP, P.D, VCO, F.F 38KHz, MUTE, (6dB), PILOT DET, DECODER, FM IF, FM DET

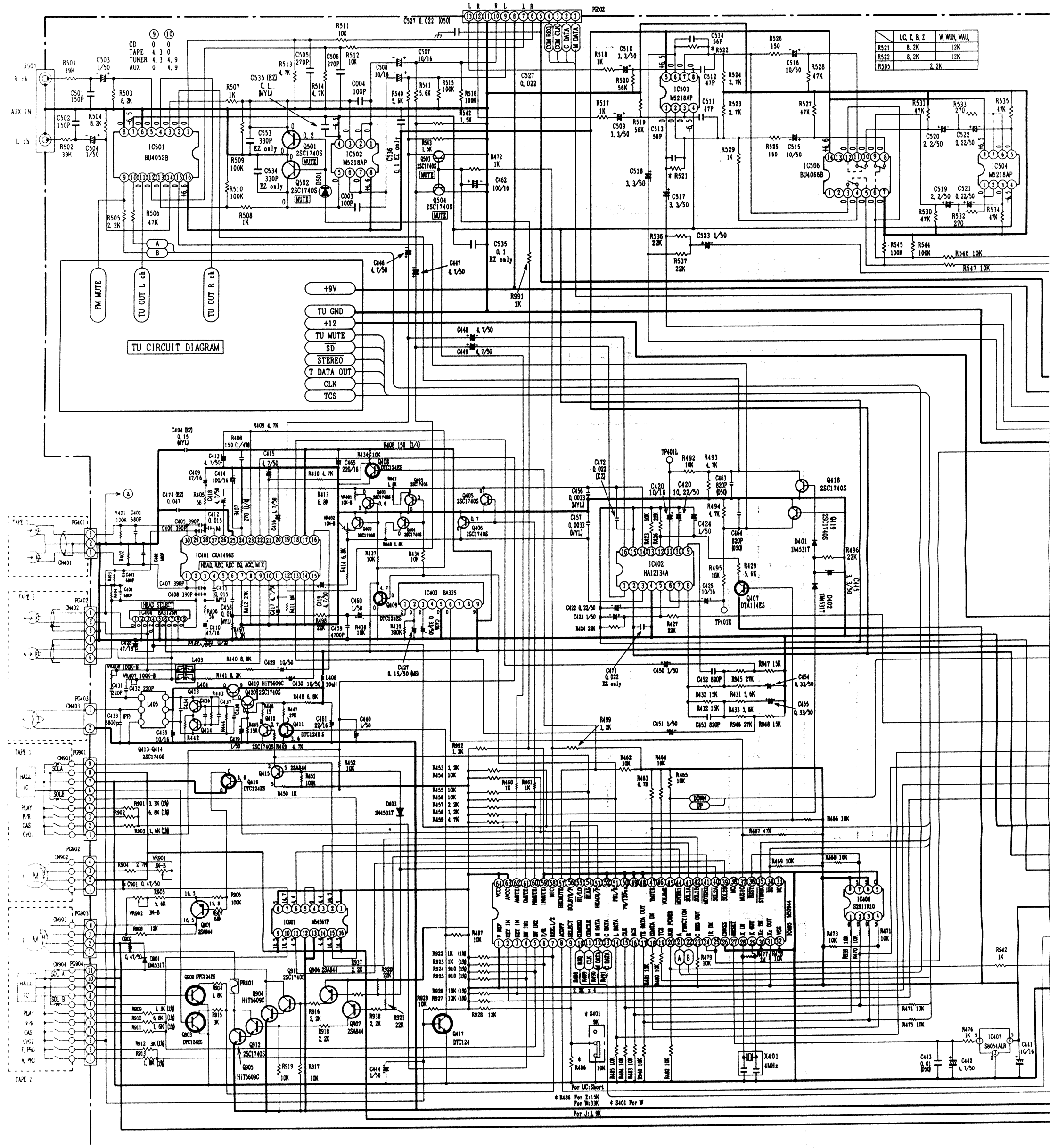
R110 56 (1/2) for Z, 150 (1/4) except Z
R201 330 for E, B, S, W
R202 330
R204 1.5K
C110 0.022 (050)
CF201, CF202 for Z
C201 0.022 (050)
C202 0.022 (050)
R203 1K
C203 0.022 (050)
C231 47/16
R218 10K
C228 4.7/50
T201 AM IPT
R220 10K
C229 0.022 (050)
R231 1K
R307 100K
R222 1K
R223 10K
C230 0.047 (050)
R226 8.2K
R219 33K
R224 15K
R225 1K
C225 0.01 (050)
TP1
R217 22K
TP2
C236 0.047 EZ only
C227 10/16
C226 0.022 (050)
C307 47/10
VOLT STB
ZD301 HZ-5C-1
R306 470 (1/2)
D301 1N4531T SWITCHING
Q301 MW
D302 1N4531T SWITCHING
Q302 LW/SW
Q303 FM
Q304 2SC1740S
D303 1N4531T SWITCHING
R304 10K
Q301-303 DTA114ES
R205 390
CP203
C204 0.01 (050)
C205 0.047 (050)
C206 0.022 (050)
C207 1/50
C208 0.0068 (050)
C209 0.022 (050)
R206 12K
T202 FM DISCR1
R207 8.2K
C234 0.022 (050)
C233 33P
C211 10/25
for E, B, S, W
C210 10/16
T203
LPF
R208 22K
C214 560p (050)
C212 1/50
R209 5.1K
R210 2.7K for E, B, S, W; 1.2K for Z
C213 0.33/50
X201 456KHz
C216 0.01 (050)
R212 5.6K
R211 5.6K
R213 1.5K
R214 1.5K
C215 0.01 (050)
C235 0.1 EZ only
C231 47/16
R227 10 (FUSE)
C232 1/50
R230 3.3K
Q201 DTA114ES
Q202 DTC124ES
SWITCHING
R305 10K
C219 10/16
T204 LPF
C217 0.0022 (050)
C221 0.0047 (050)
R215 8.2k
R228 4.7K
C220 10/16
T205 LPF
C222 0.0047 (050)
R216 8.2K
R229 4.7K
C218 0.0022 (050)

*

for	Tuner
B, E, Z	LW BAND
S, W	SW BAND

T CS, T DATA, CLK, FM MUTE, +12V VCC, MUTE, T1 GND, ST, SD, L, R, +9V VCC

MAIN BLOCK


TU CIRCUIT DIAGRAM
FM MUTE
TU OUT L ch
TU OUT R ch
+9V
TU GND
+12
TU MUTE
SD
STEREO
T DATA OUT
CLK
TCS
IC501 BU4052B
IC502 M5218AP
IC503 M5218AP
IC504 M5218AP
IC506 BU4066B
IC401 CXA1498S
IC402 HA12134A
IC403 BA335
IC404 BU3126R
IC901 M54567P
IC1406 S2911R10
IC1407 S8054ALR
Q501 2SC1740S MUTE
Q502 2SC1740S MUTE
Q503 2SC1740S MUTE
Q504 2SC1740S MUTE
Q401 2SC1740S
Q402 2SC1740S
Q403 2SC1740S
Q404 2SC1740S
Q405 2SC1740S
Q406 2SC1740S
Q407 DTA114ES
Q408 DTC124ES
Q409 DTC124ES
Q410 HiT5609C
Q411 DTC124ES
Q412 DTC124ES
Q413 2SC1740S
Q414 2SC1740S
Q415 2SA844
Q416 DTC124ES
Q417 DTC124
Q418 2SC1740S
Q419 2SC1740S
Q801 2SA844
Q802 DTC124ES
Q803 DTC124ES
Q901 2SA844
Q902 DTC124ES
Q903 2SA844
Q904 HiT5609C
Q905 HiT5609C
Q906 2SA844
Q907 2SA844
Q911 2SC1740S
Q912 2SC1740S
D401 1N4531T
D402 1N4531T
D403 1N4531T
D501
D801 1N4531T
PR401
X401 4MHz
S401
R486
For UC:Short
For E:15K
For W:33K
For J:3.9K
* S401 For W
* R486
* R521
* R522
DOWN
UP
TAPE 1
TAPE 2
CD 0 0
TAPE 4.3 0
TUNER 4.3 4.9
AUX 0 4.9
R Ch
L Ch
AUX IN
CN401
CN402
CN403
CN901
CN902
CN903
CN904
PG401
PG402
PG403
PG901
PG902
PG903
PG904
HALL IC
SOL A
SOL B
PLAY
F/R
CAS
CTRL
F. PRO
R. PRO
M
L R R L L R
R502
CCM R/D3
CCM CLK
C. DATA
M DATA
C527 0.022 (D50)
C535 (EZ) 0.1 (MYL)
C536 0.1 EZ only
C553 330P EZ only
C534 330P EZ only
C446 4.7/50
C447 4.7/50
C448 4.7/50
C449 4.7/50
C535 0.1 EZ only
C404 (EZ) 0.15 (MYL)
C471 0.022 EZ only
C427 0.15/50 (MS)
C456 0.0033 (MYL)
C457 0.0033 (MYL)
C472 0.022 (EZ)
C474 (EZ) 0.047
C536 0.1 EZ only
R991 1K
R992 1.2K
R999 1.2K
R1001 1.2K
R1002 1.2K
R1003 1.2K
R1004 1.2K
R1005 1.2K
R1006 1.2K
R1007 1.2K
R1008 1.2K
R1009 1.2K
R1010 1.2K
R1011 1.2K
R1012 1.2K
R1013 1.2K
R1014 1.2K
R1015 1.2K
R1016 1.2K
R1017 1.2K
R1018 1.2K
R1019 1.2K
R1020 1.2K

	UC, E, B, Z	W, WUN, WAU
R521	8. 2K	12K
R522	8. 2K	12K
R505	2. 2K	

IC401

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
(V)	0	0	2.7	2.5	2.5	2.5	1.25	0	3.7	0	0	2.0	2.0	0	2.0

Pin No.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
(V)	2.9	5.8	2.0	2.0	2.0	0	5	0.2	5.8	—	2.5	2.5	0.7	0	0

IC405

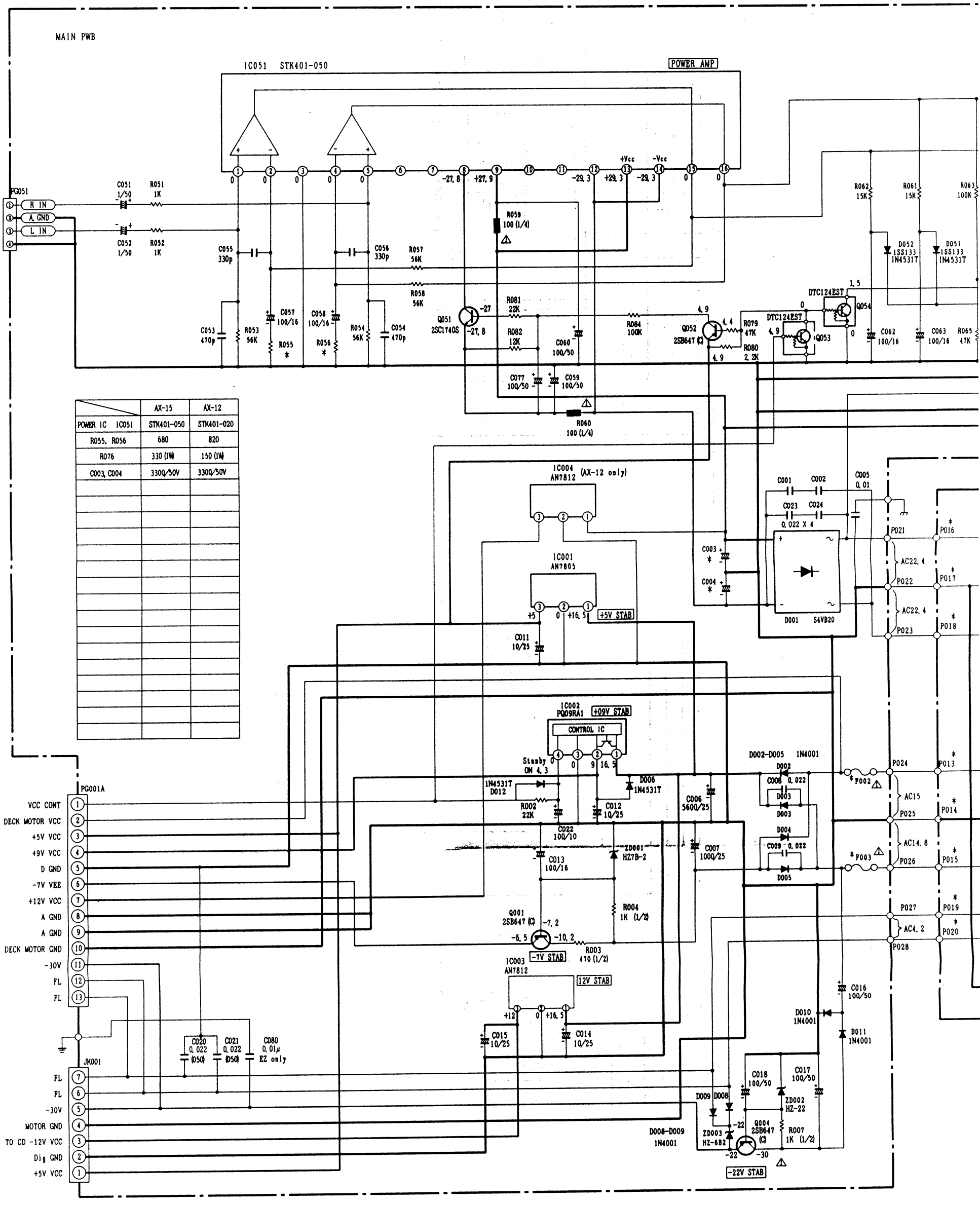
Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
(V)	5	5	5	5	5	2.6	5	5	2.6	—	—	—	—	0	0	0

Pin No.	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
(V)	0	5	5	4.8	—	—	5	5	5	0	5	2.2	0.1	0	0	0

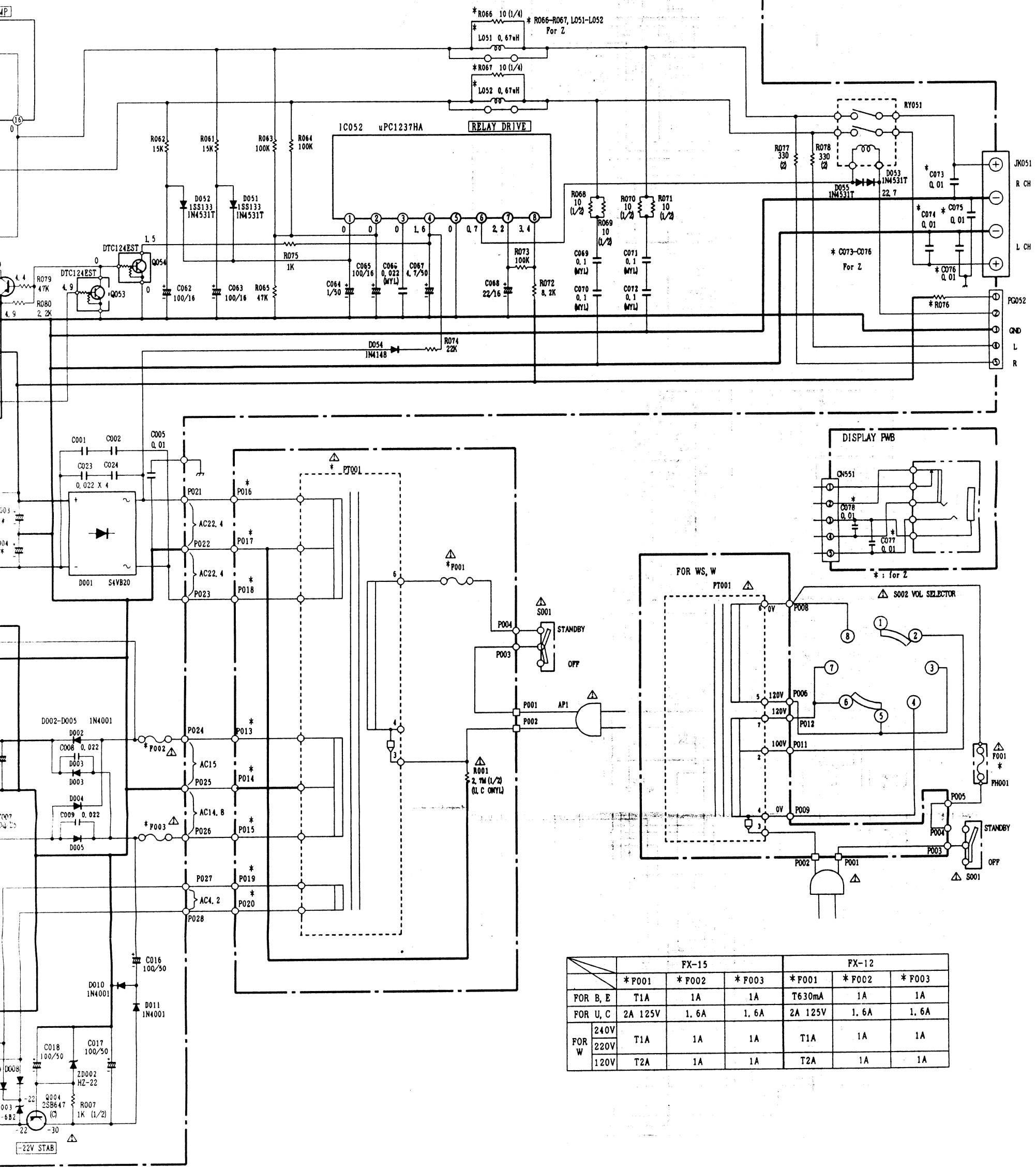
Pin No.	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
(V)	—	5	5.5	5	0	—	4.4	5	5	4.4	4.4	4.4	0	0	4.7	0

Pin No.	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
(V)	0	0	—	0	0	0	3.6	5	3.6	0	0	2	2	0	5	5

POWER BLOCK

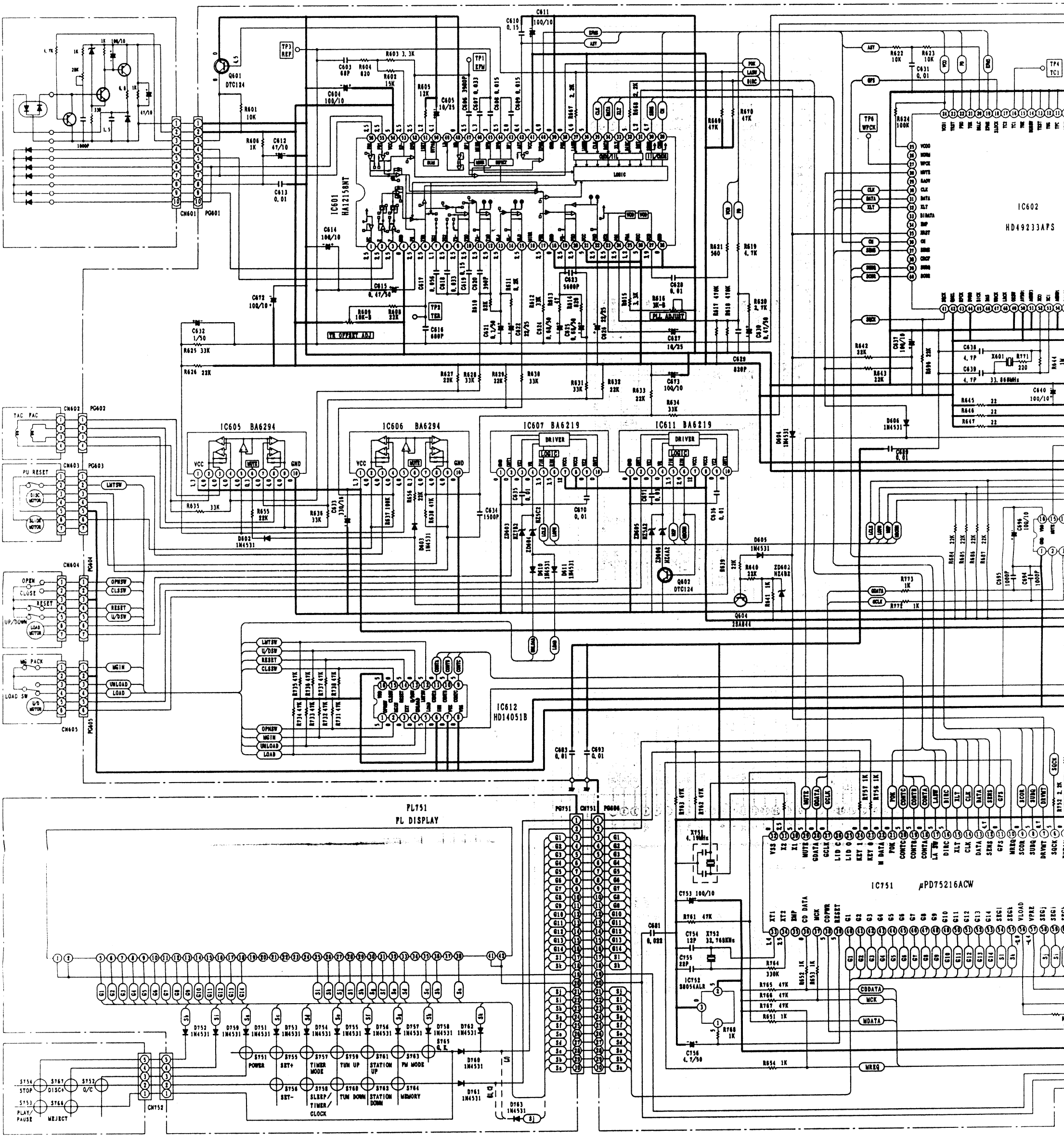


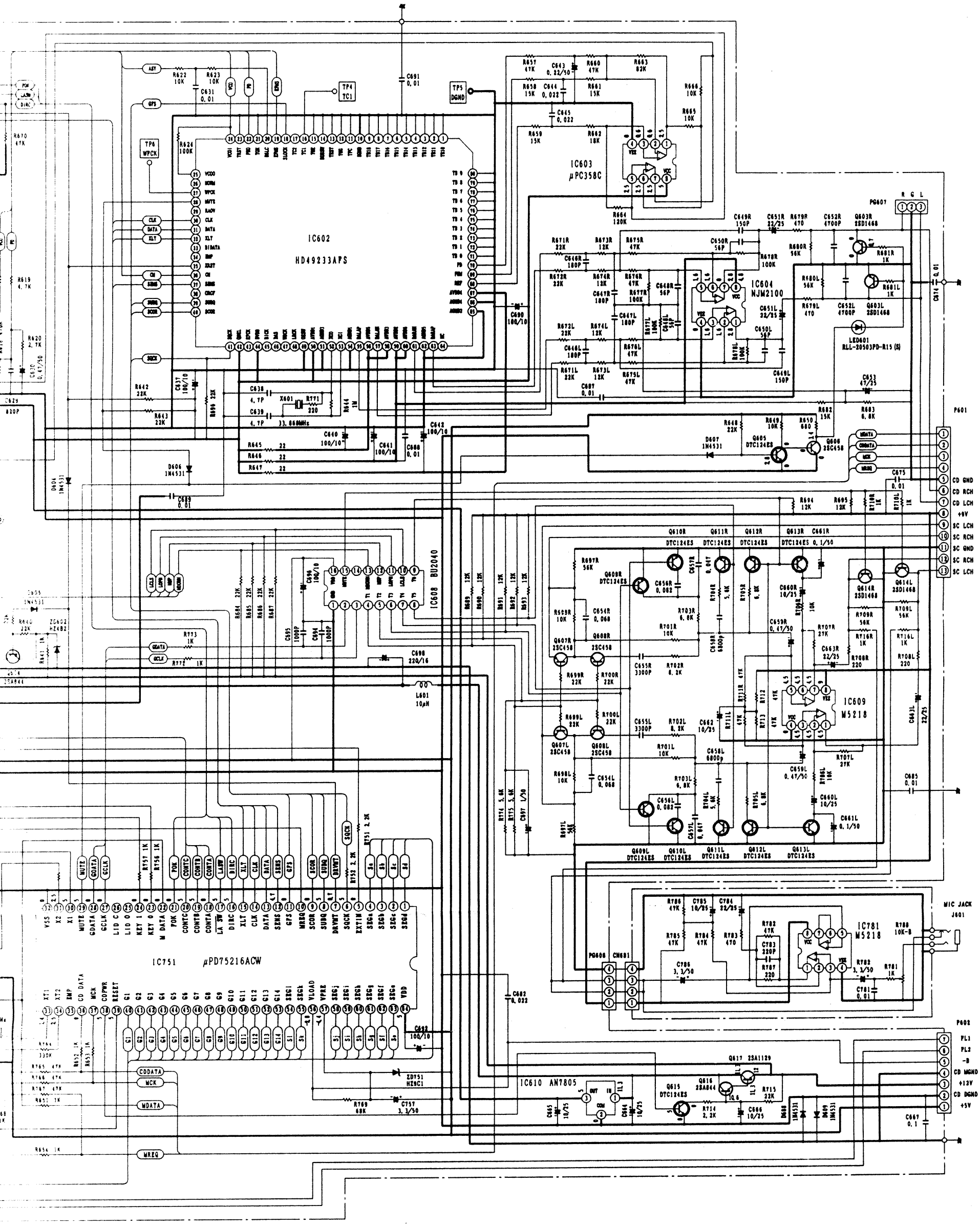
	AX-15	AX-12
POWER IC IC051	STK401-050	STK401-020
R055, R056	680	820
R076	330 (1W)	150 (1W)
C003, C004	3300/50V	3300/50V



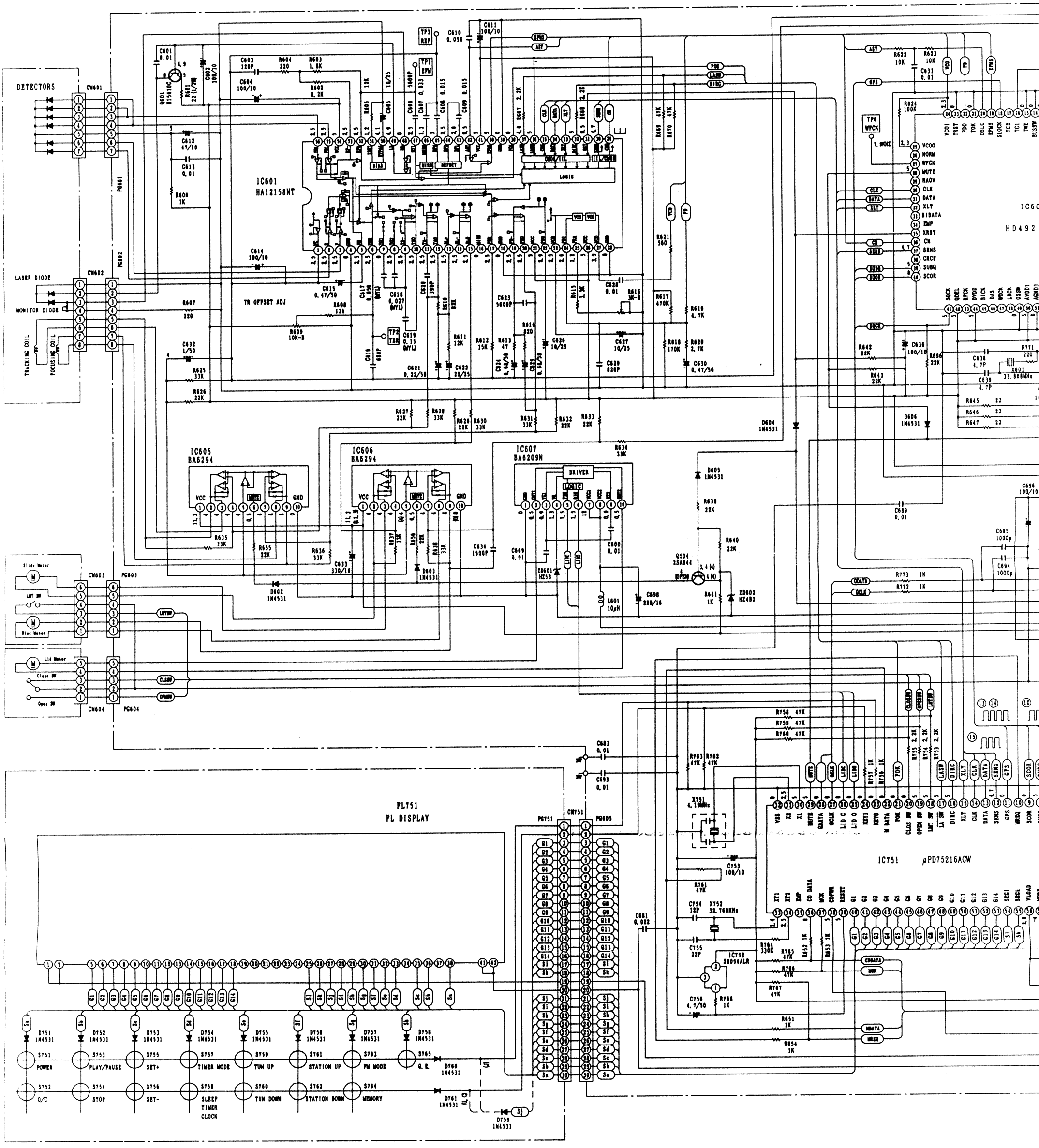
		FX-15			FX-12		
		*F001	*F002	*F003	*F001	*F002	*F003
FOR B, E		T1A	1A	1A	T630mA	1A	1A
FOR U, C		2A 125V	1.6A	1.6A	2A 125V	1.6A	1.6A
FOR W	240V	T1A	1A	1A	T1A	1A	1A
	220V						
	120V	T2A	1A	1A	T2A	1A	1A

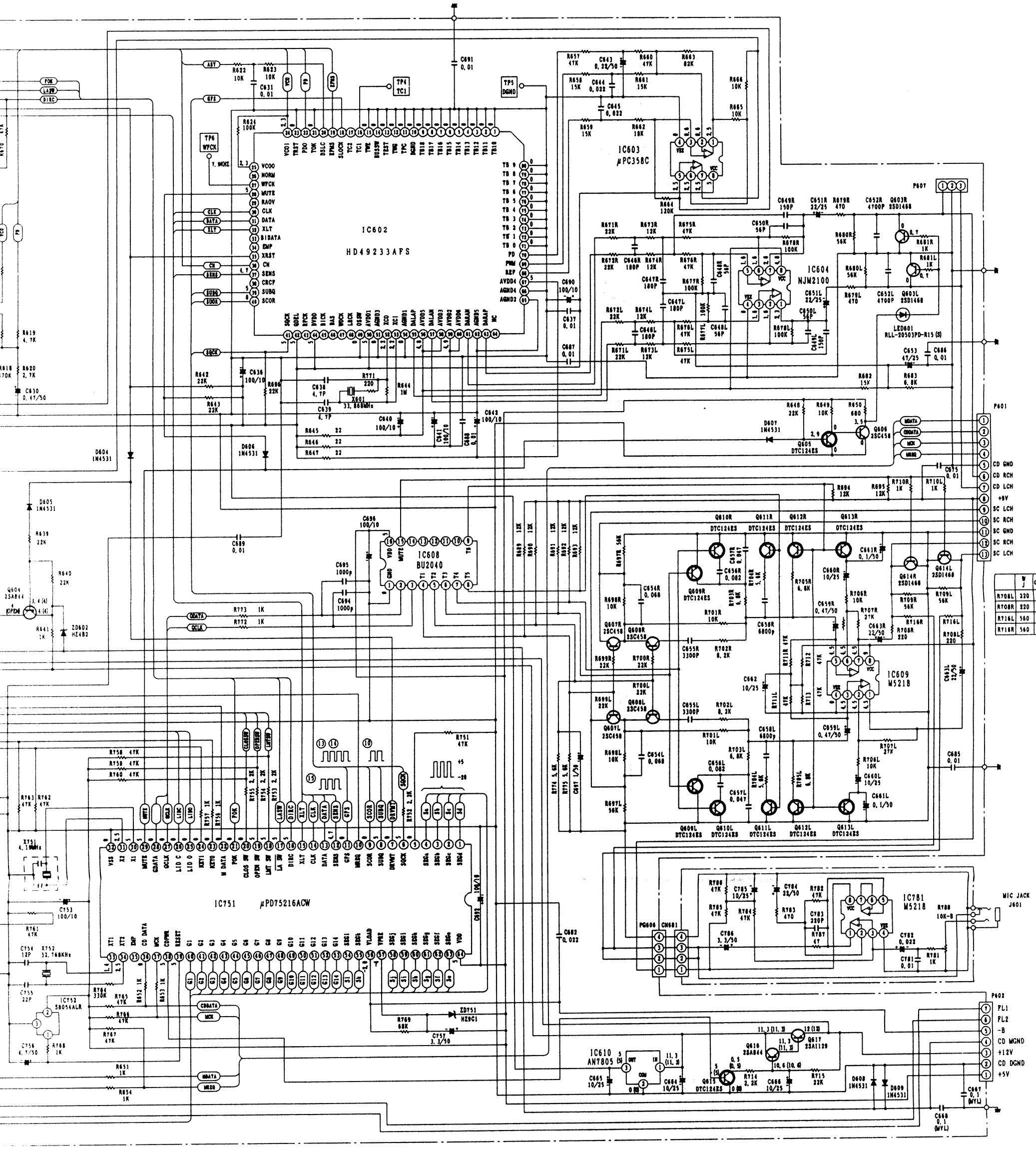
CD BLOCK(HTC-C15)




IC602
HD49233APS
IC603
μPC358C
IC604
NJM2100
IC608 BU2040
IC609
M5218
IC610 AN7805
IC751 μPD75216ACW
IC781
M5218
MUTE
GDATA
GCLK
DIRC
XLT
CLK
DATA
SENS
GFS
SCOR
SUBQ
DRWT
SQCK
MRQ
CDDATA
MCK
MDATA
MREQ
CD GND
CD RCH
CD LCH
+9V
SC LCH
SC RCH
SC GND
SC RCH
SC LCH
MIC JACK
J601
PL1
PL2
-B
CD MGND
+12V
CD DGND
+5V

CD BLOCK(HTC-15)



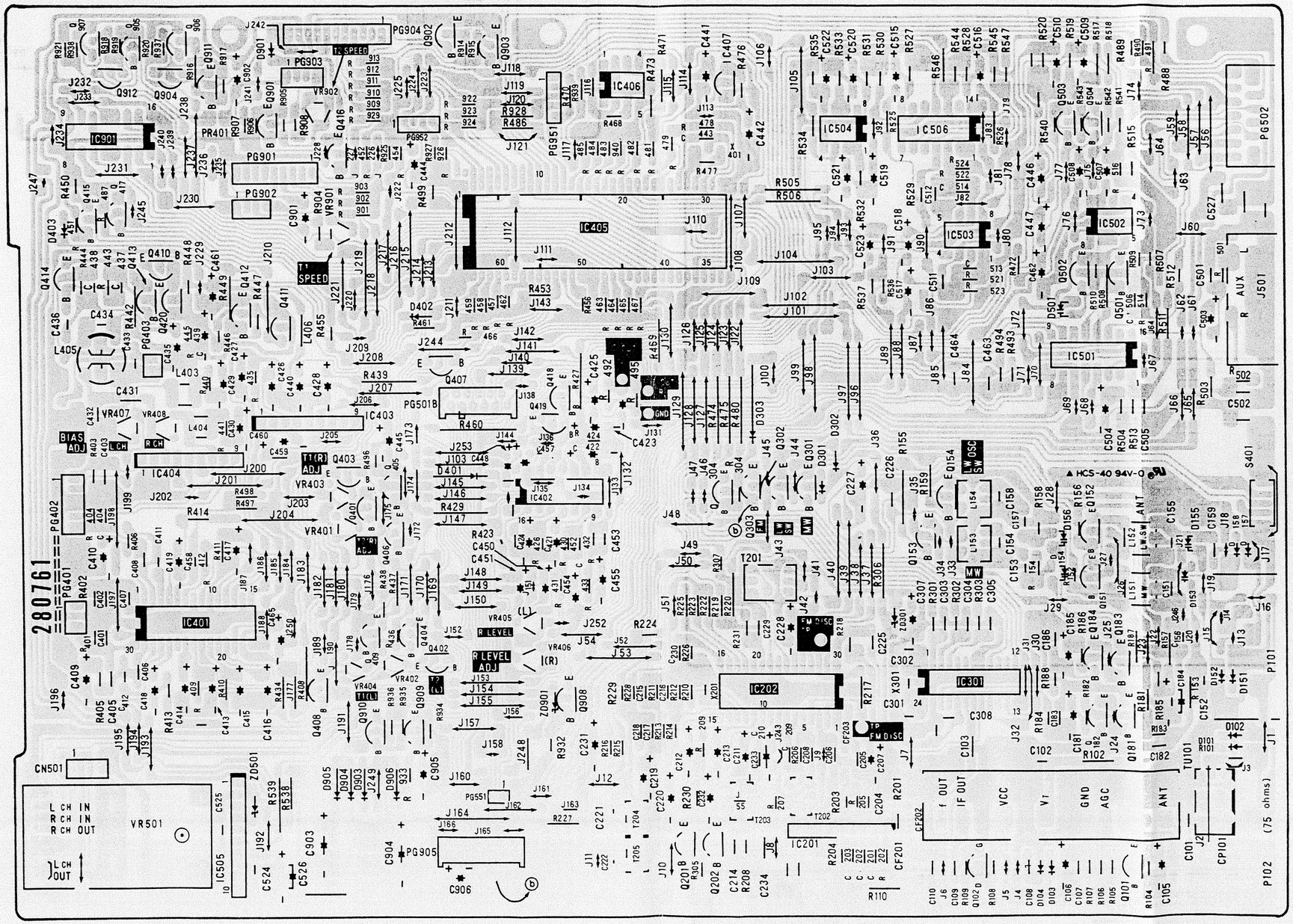


	W J	OTHERS
R708L	220	220
R708R	220	220
R716L	560	—
R716R	560	—

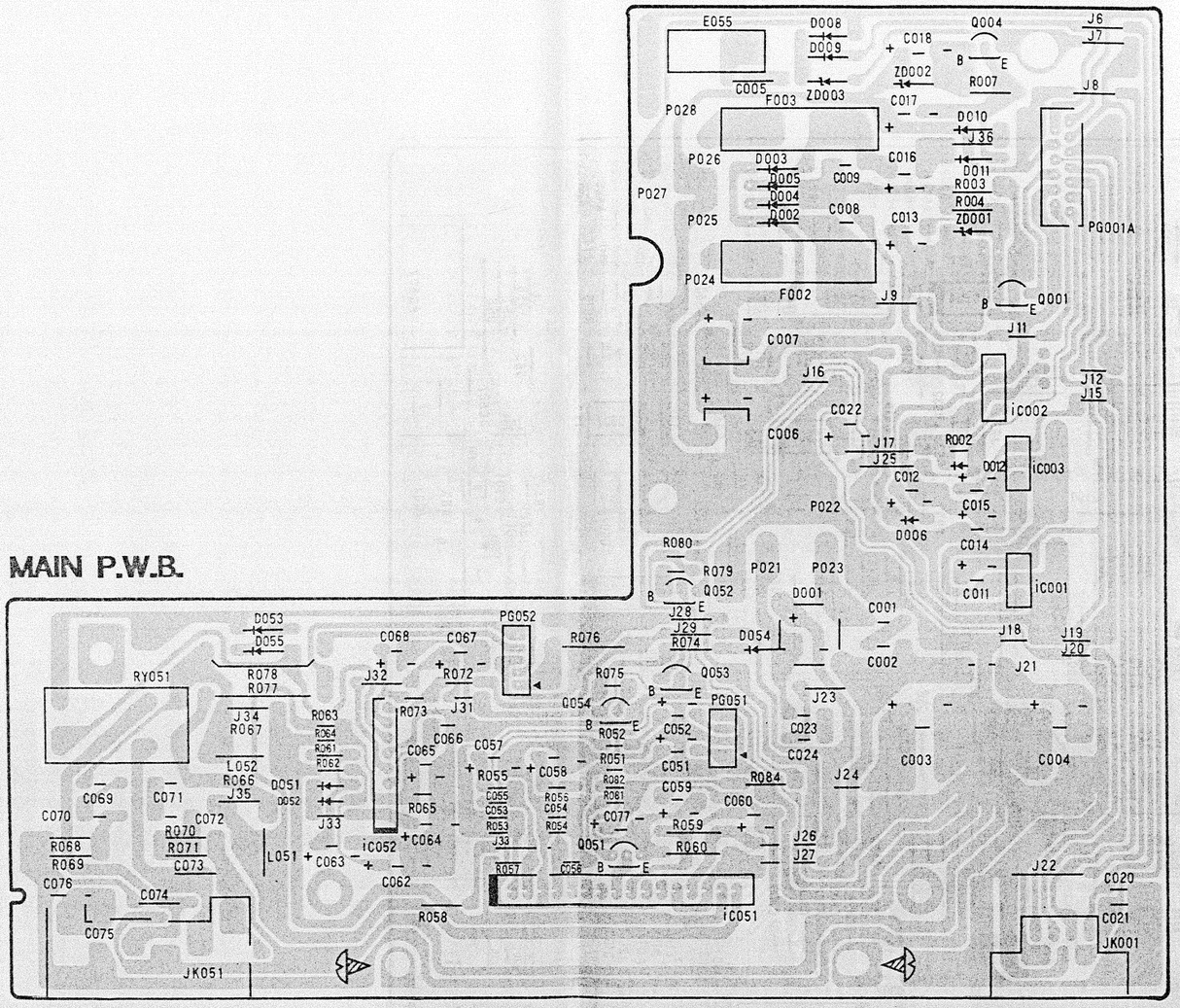
PRINTED WIRING BORD · PLAN DE BASE

HAD-12/15

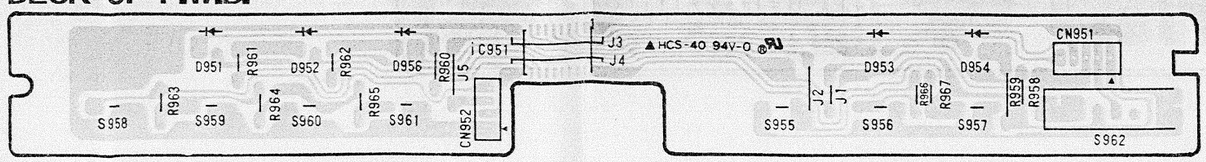
AUDIO P.W.B.



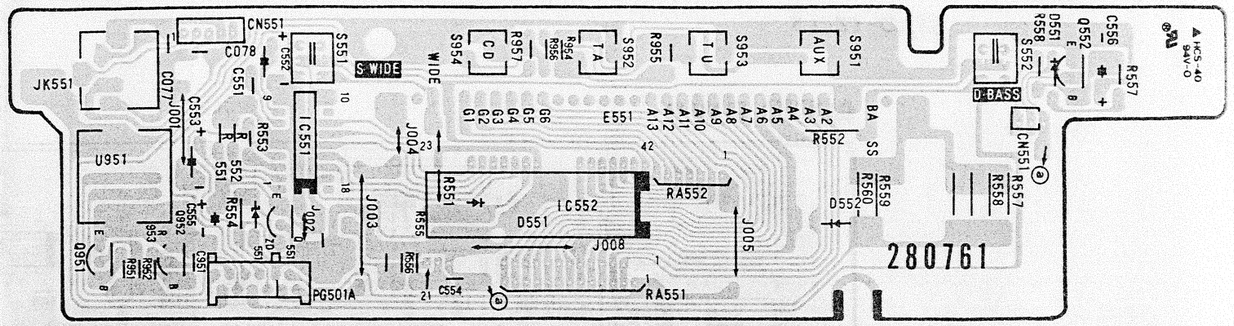
MAIN P.W.B.



DECK OP P.W.B.

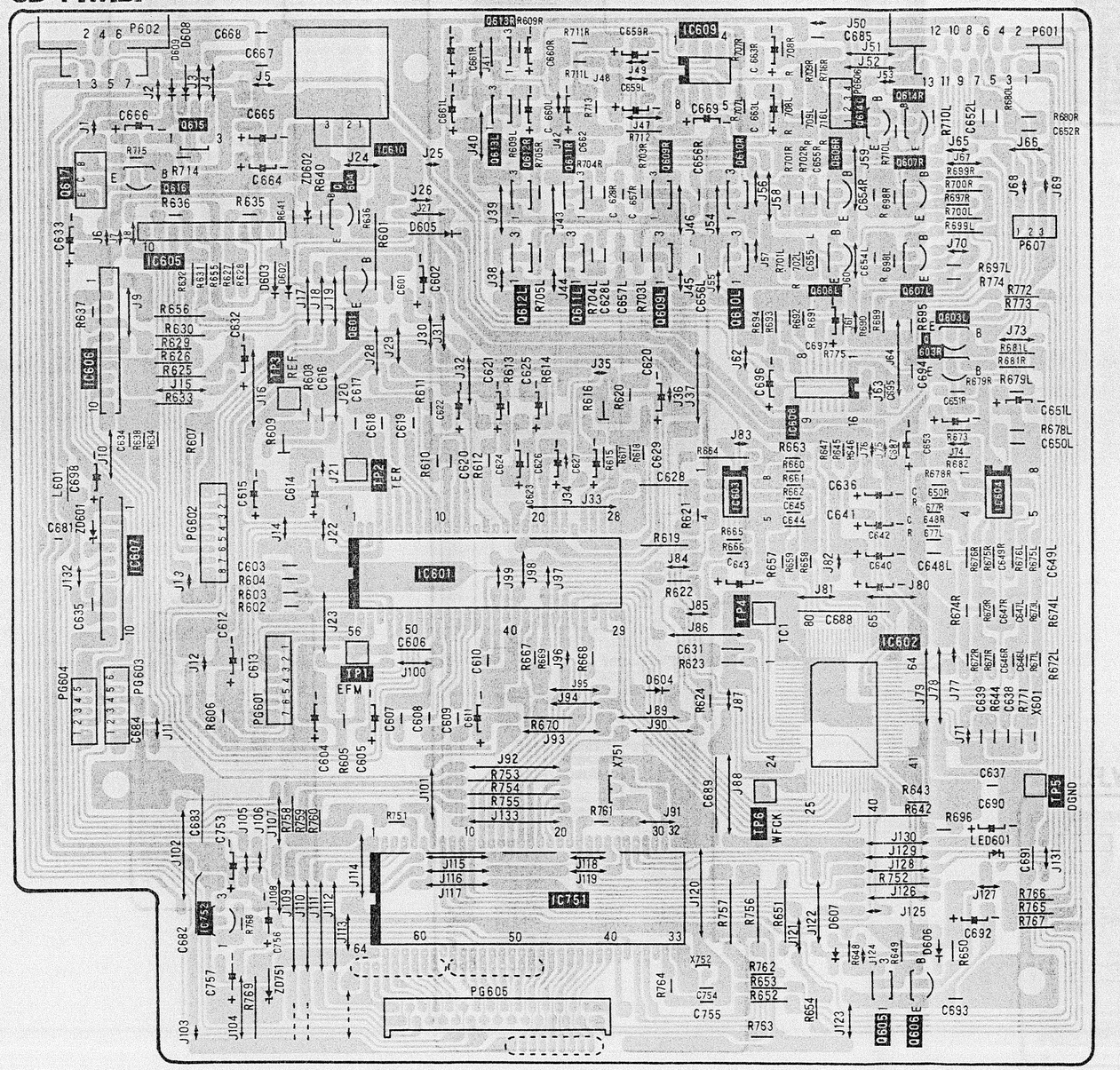


SPEANA P.W.B.



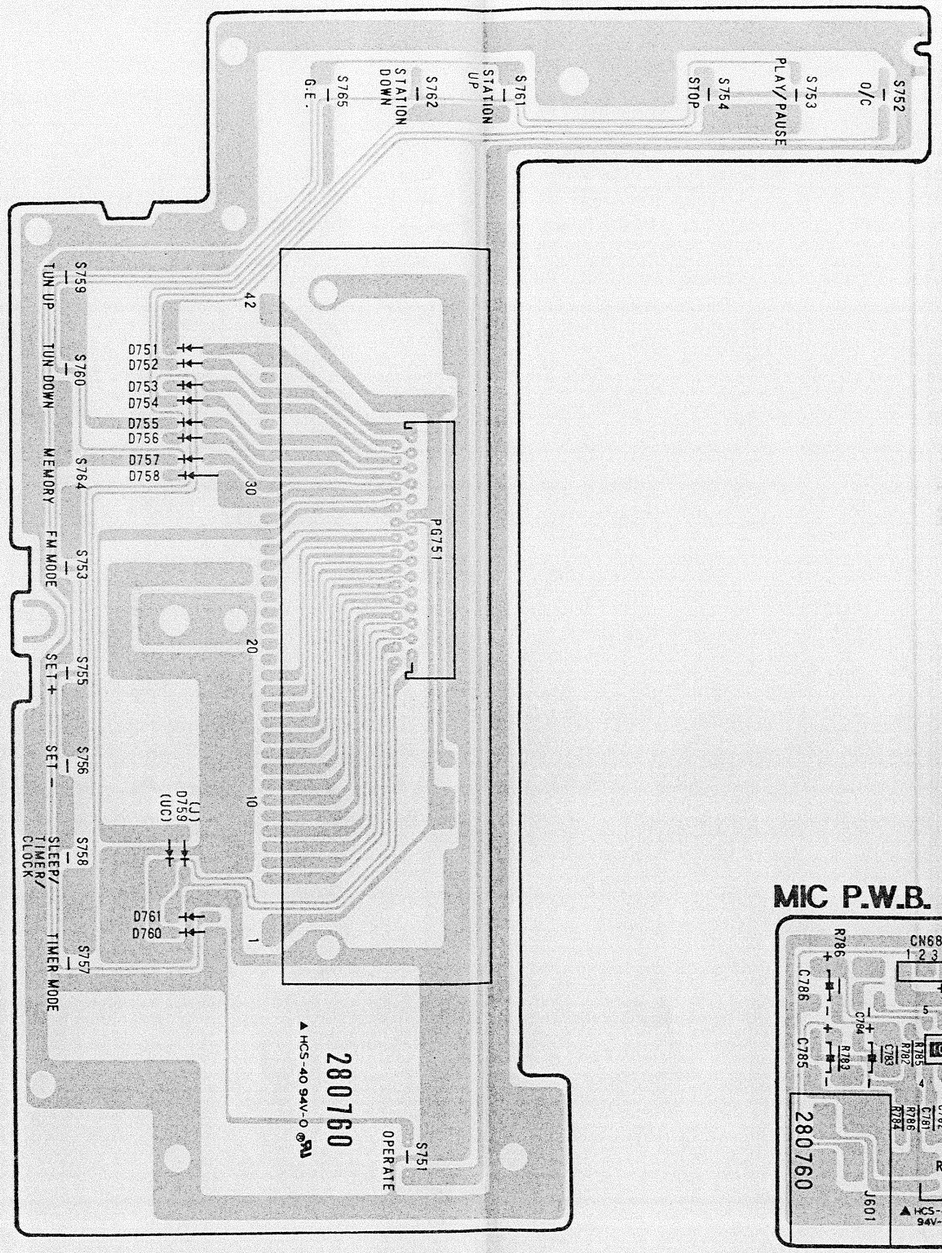
HTC-15

CD P.W.B.

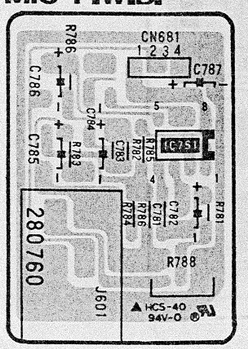

P602
P601
IC609
IC601
IC602
IC751
IC606
IC607
IC610
P607
P603
P604
P605
P606
TP1
TP2
TP3
TP4
TP5
TP6
EFM
REF
TER
WFCK
DGND
LED601
TC1
X751
X752
Q605
Q606

HTC-15

DISPLAY P.W.B.

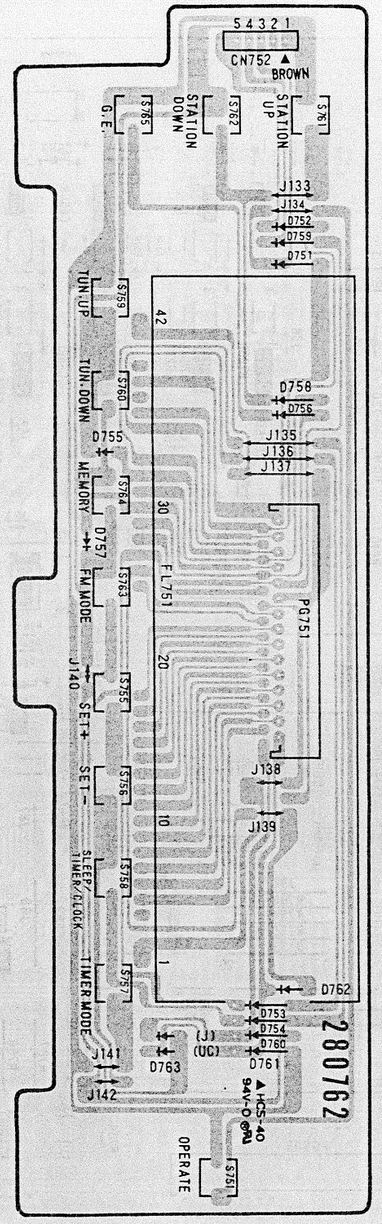


MIC P.W.B.

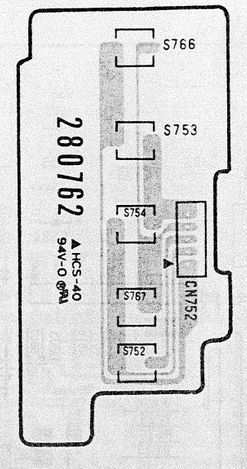


HTC-C15

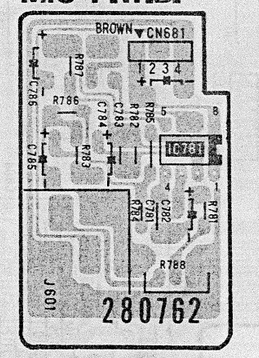
DISPLAY P.W.B.



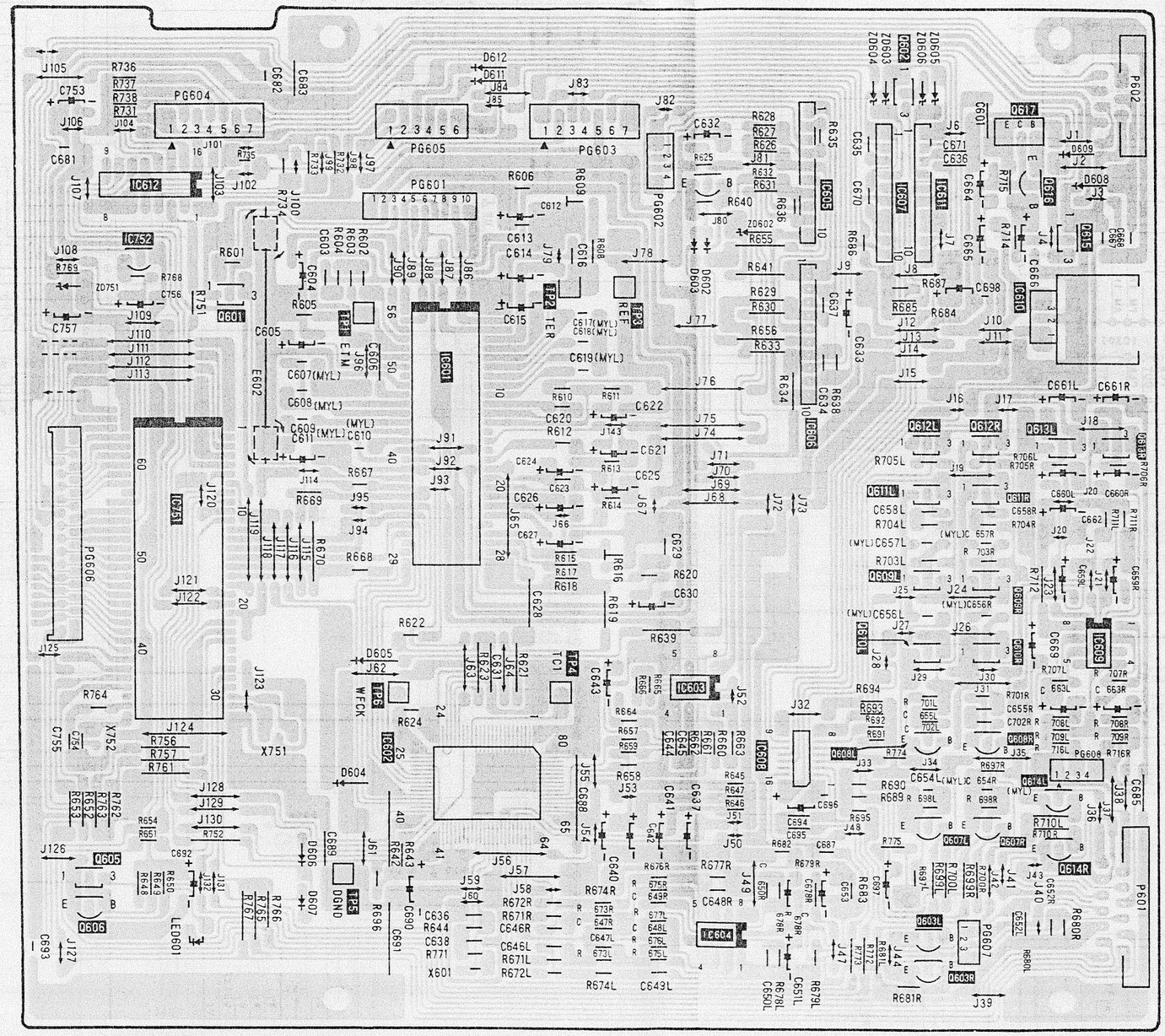
SW P.W.B.



MIC P.W.B.

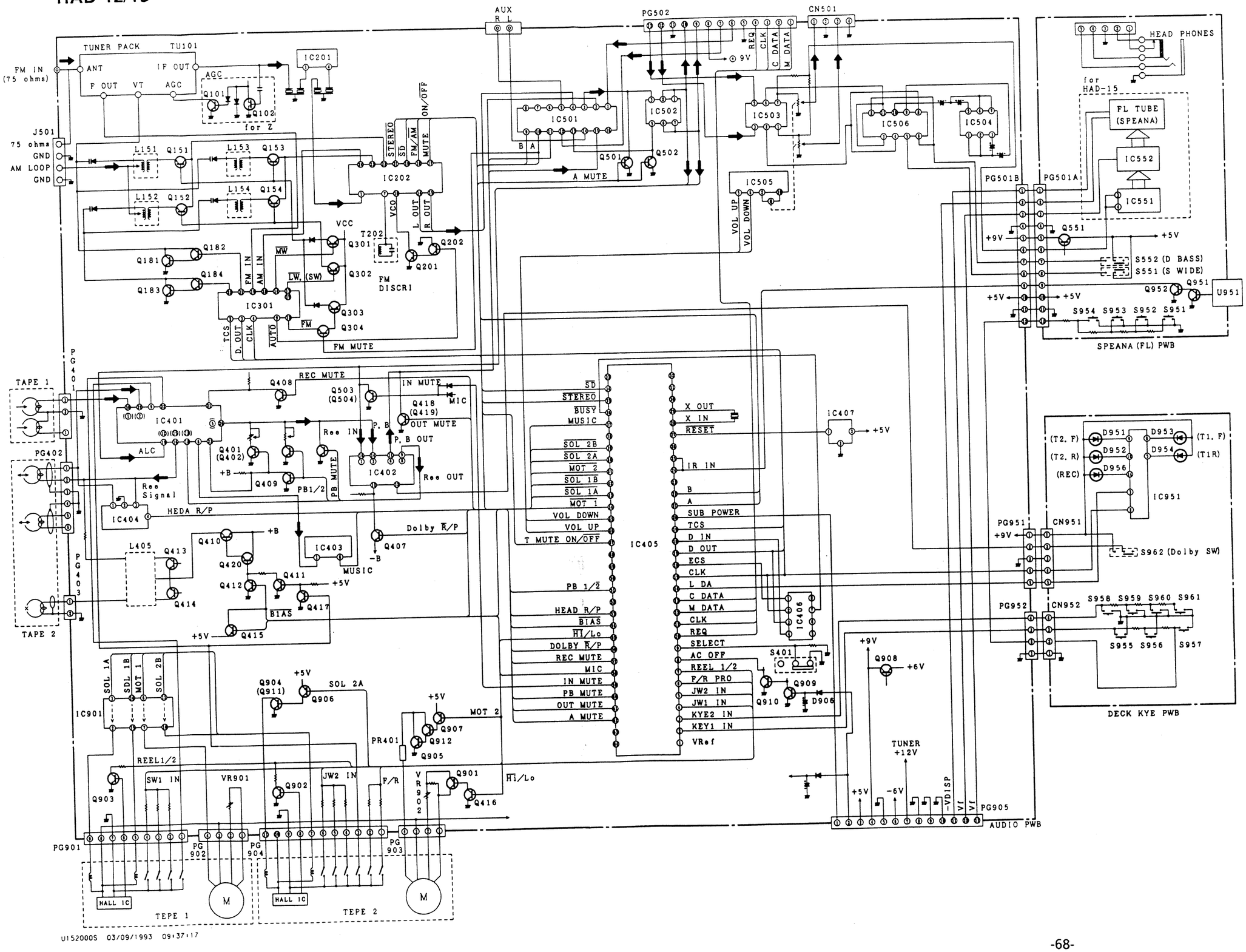


CDC P.W.B.


IC612
IC752
IC601
IC751
IC602
IC603
IC604
IC605
IC606
IC607
IC608
IC609
IC610
IC611
PG601
PG602
PG603
PG604
PG605
PG606
PG607
PG608
P601
P602
Q601
Q602
Q603L
Q603R
Q604L
Q604R
Q605
Q606
Q607L
Q607R
Q608L
Q608R
Q609L
Q609R
Q610L
Q610R
Q611L
Q611R
Q612L
Q612R
Q613L
Q613R
Q614L
Q614R
Q615
Q616
Q617
TP23
REF
TP24
TC1
TP25
WFCK
TP26
DGND
X751
X752
X601
LED601
E602
ETM
TER

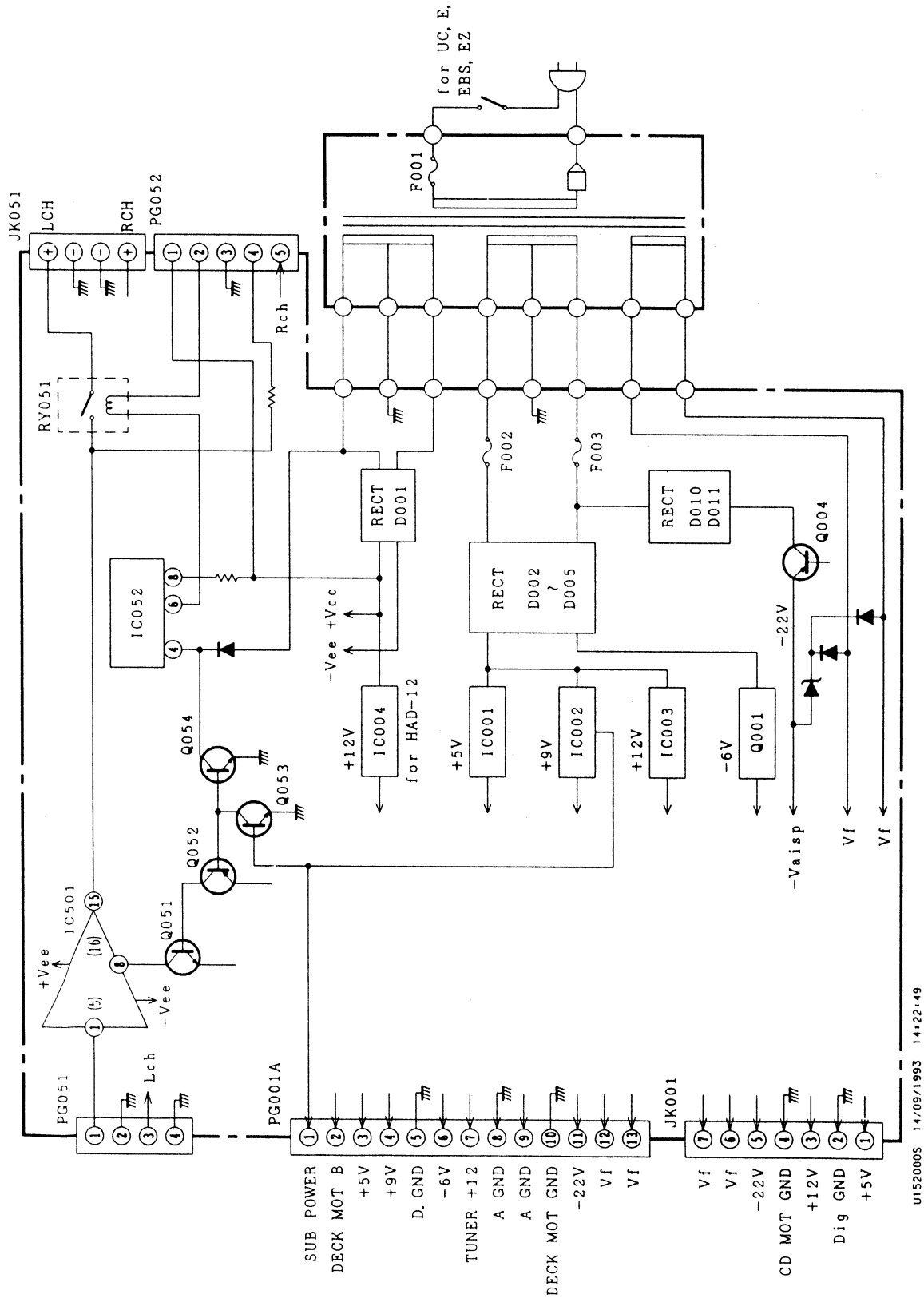
BLOCK DIAGRAM · DIAGRAMME SYNOPTIQUE

HAD-12/15

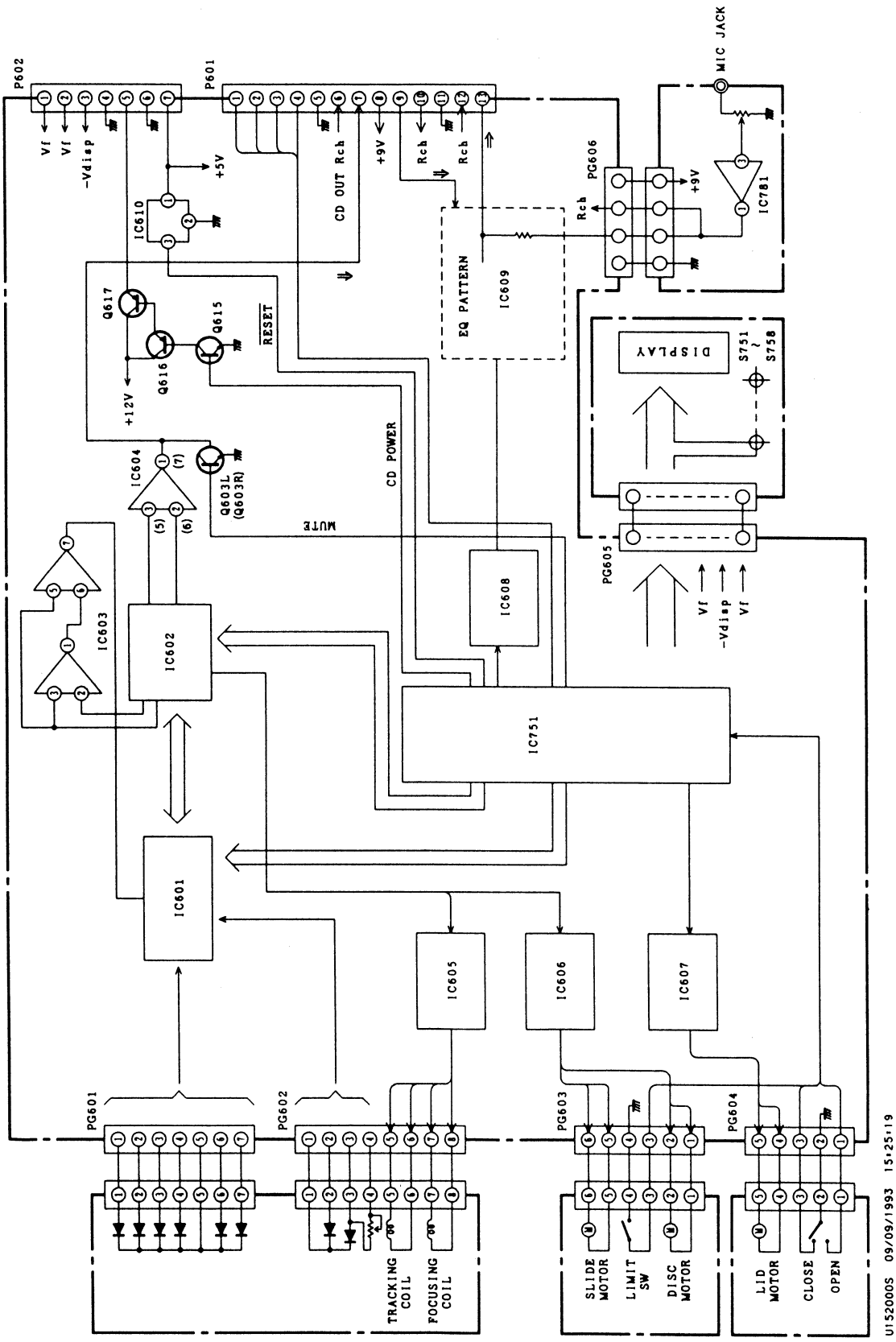


U152000S 03/09/1993 09:37:17

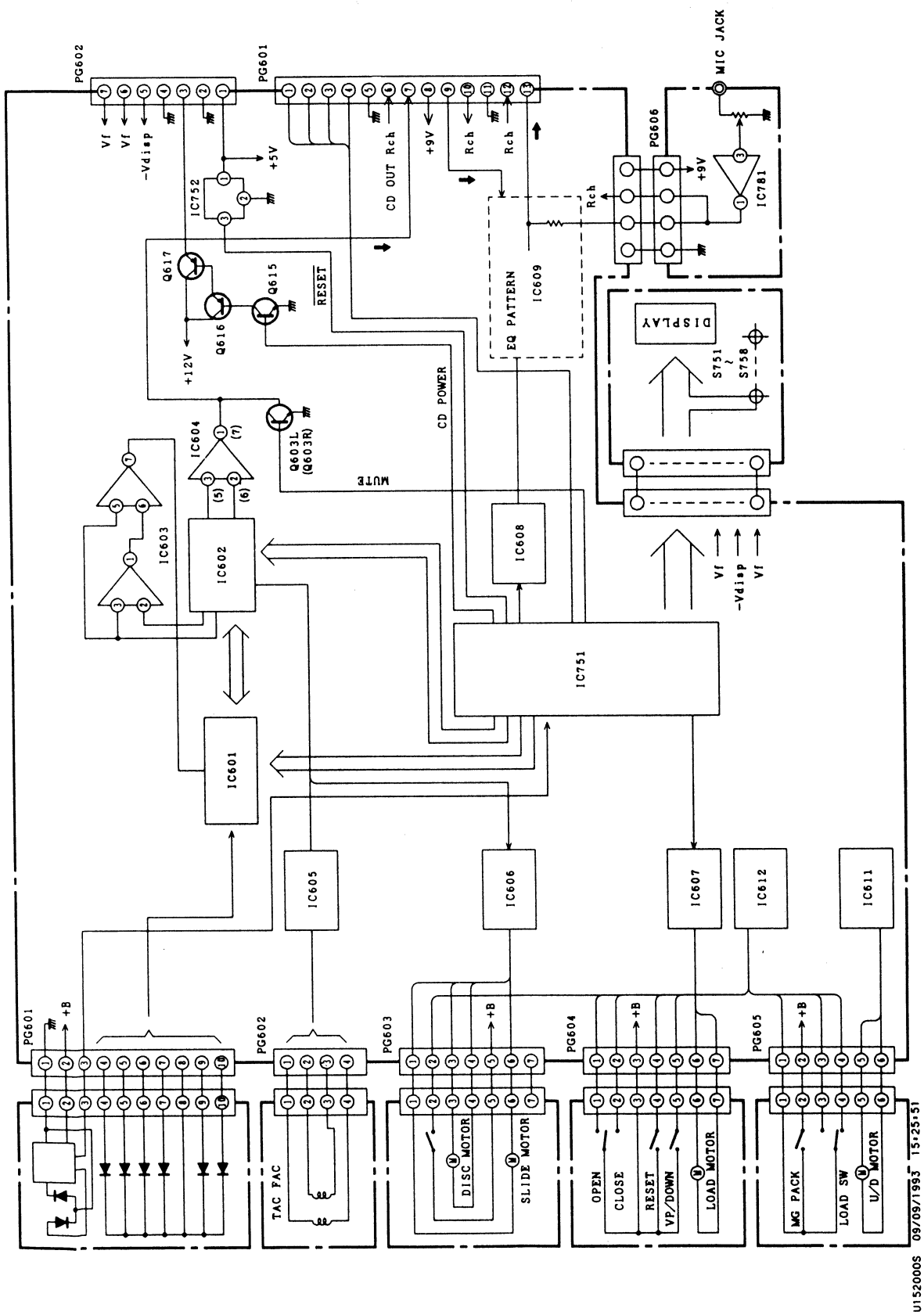
HAD-12/15
(Power block)



HTC-15


P602
P601
MIC JACK
Vf
Vf
-Vdisp
+5V
CD OUT Rch
+9V
Rch
Rch
PG606
+9V
IC781
IC610
EQ PATTERN
IC609
Q617
Q615
RESET
Q616
+12V
DISPLAY
S751
~
S758
IC604
(7)
Q603L
(Q603R)
CD POWER
MUTE
(5)
(6)
PG605
Vf
-Vdisp
Vf
IC608
IC603
IC602
IC751
IC601
IC605
IC606
IC607
PG601
PG602
PG603
PG604
TRACKING
COIL
FOCUSING
COIL
SLIDE
MOTOR
LIMIT
SW
DISC
MOTOR
LID
MOTOR
CLOSE
OPEN
U152000S 09/09/1993 15:25:19

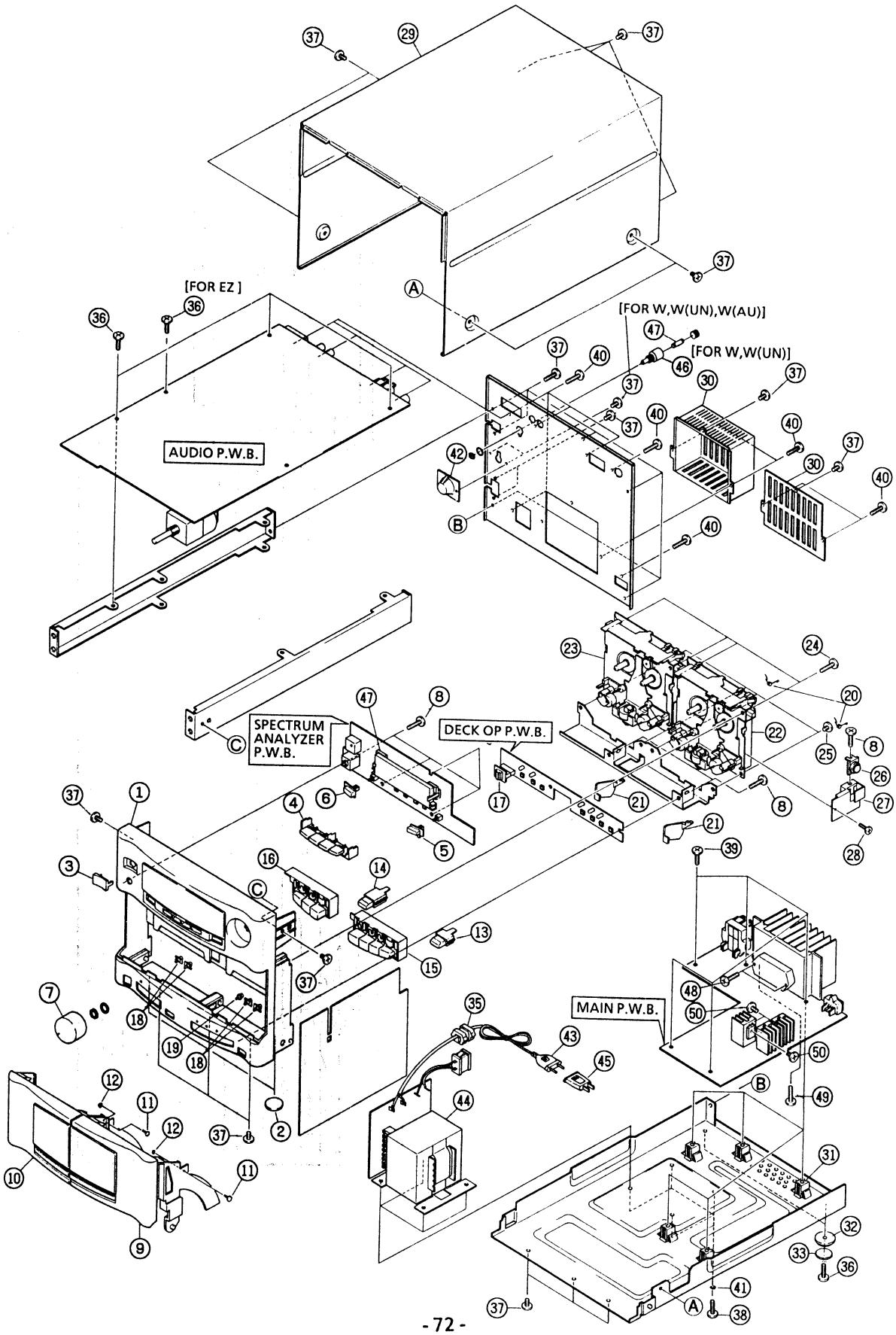
HTC-C15


PG602
PG601
MIC JACK
Vf
Vf
-Vdisp
+5V
IC752
CD OUT Rch
+9V
Rch
Rch
PG606
+9V
IC781
Rch
Q617
Q615
RESET
Q616
+12V
EQ PATTERN
IC609
DISPLAY
S751
~
S758
CD POWER
IC604
(7)
Q603L
(Q603R)
MUTE
(5)
(6)
IC603
IC602
IC608
Vf
-Vdisp
Vf
IC751
IC601
IC605
IC606
IC607
IC612
IC611
PG601
+B
PG602
PG603
+B
PG604
+B
PG605
+B
TAC FAC
DISC MOTOR
SLIDE MOTOR
OPEN
CLOSE
RESET
VP/DOWN
LOAD MOTOR
MG PACK
LOAD SW
U/D MOTOR
U152000S 09/09/1993 15:25:51

EXPLODED VIEW · VUE EXPLOSEE

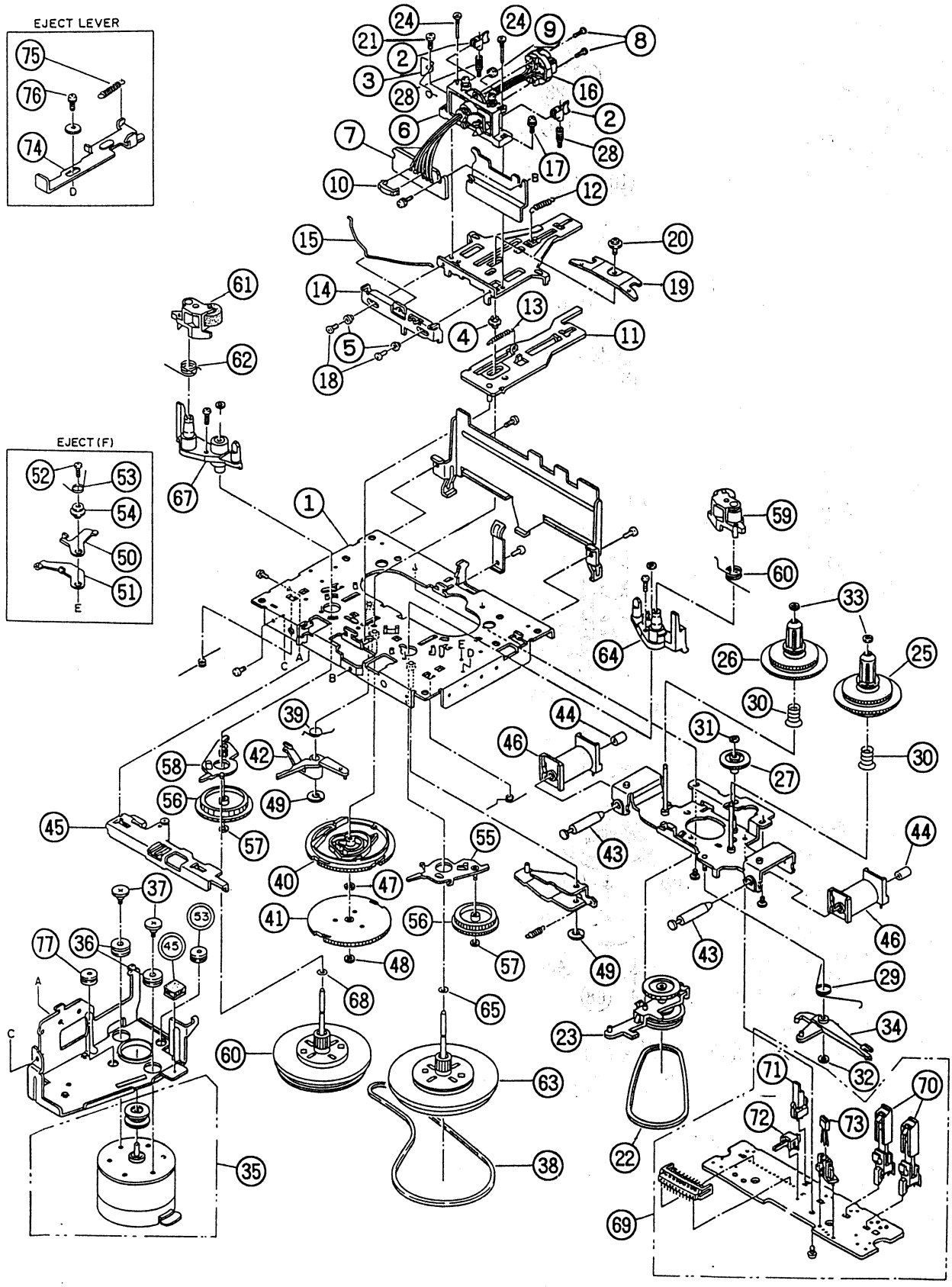
HAD-12/15(Cabinet) HAD-12/15(Coffret)

·Nos. are reference Nos. of parts list.
·Cas numéros correspondent à la liste des pièces.



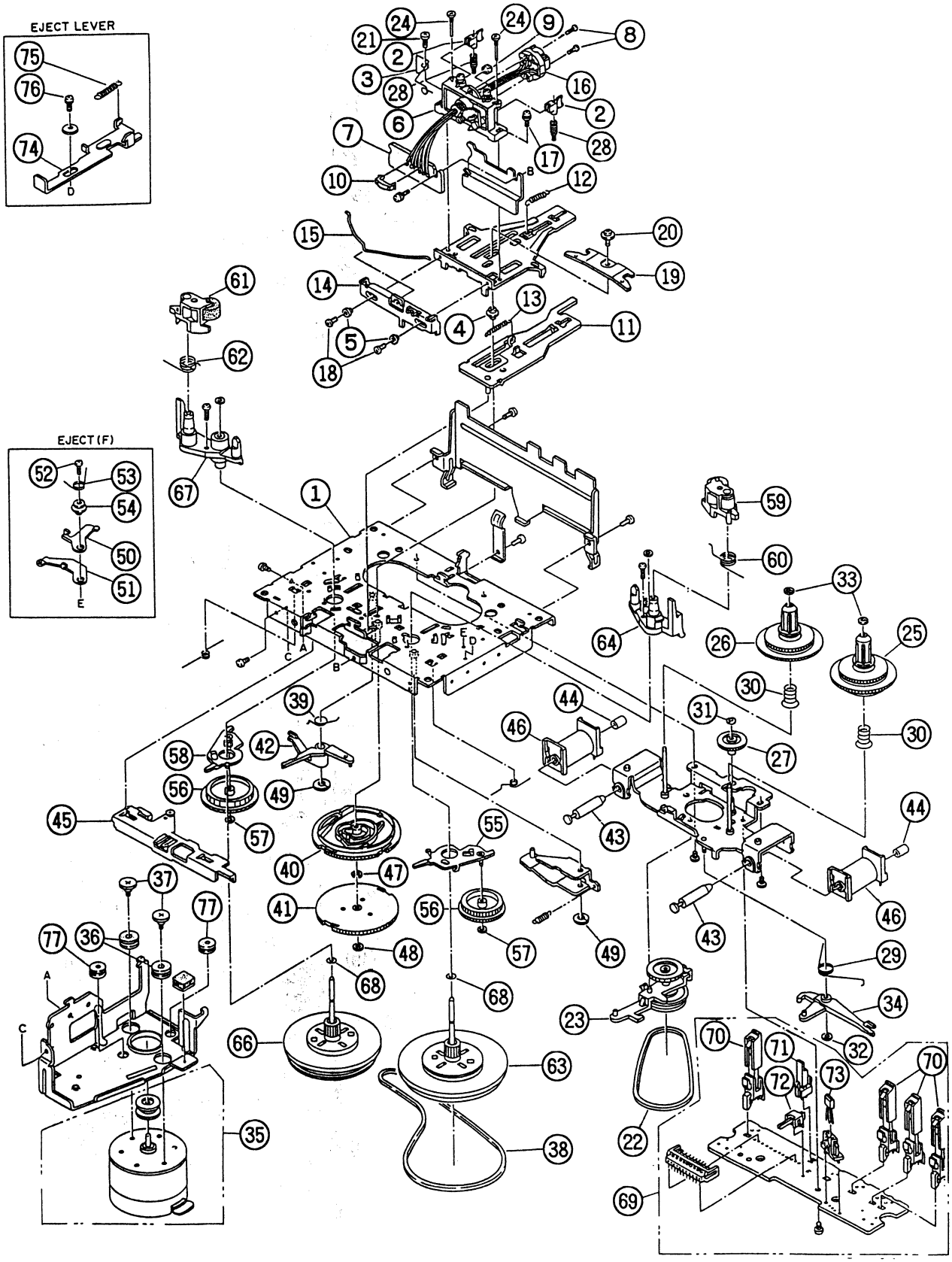
(Cassette Chassis) (Châssis de Cassette)
Tape1 (TN-1800-267) Bande1 (TN-1800-267)

·Nos. are reference Nos. of parts list.
·Cas numéros correspondent à la liste des pièces.



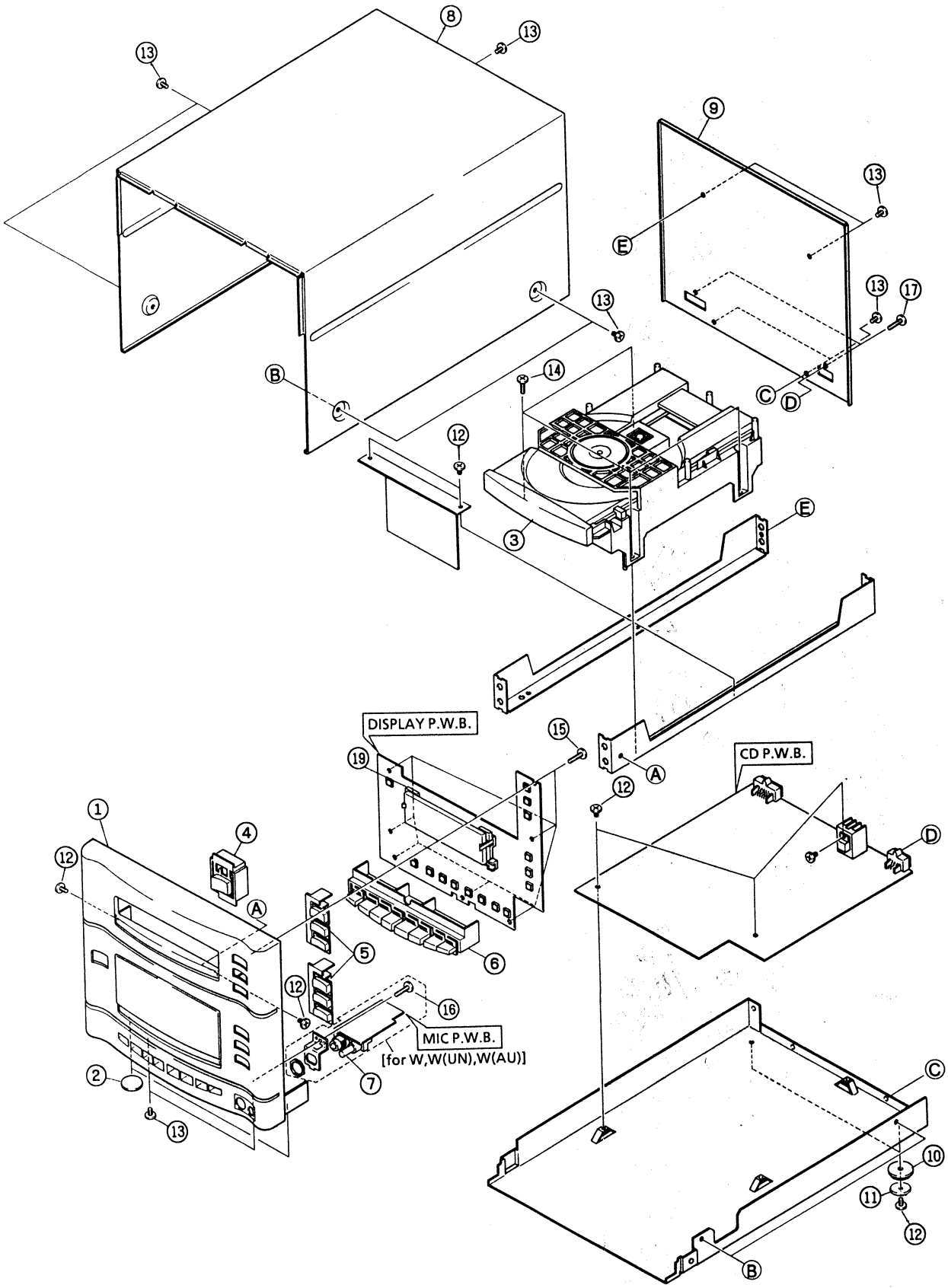
(Cassette Chassis) (Châssis de Cassette)
Tape2 (TN-1800-268) Bande2 (TN-1800-268)

·Nos. are reference Nos. of parts list.
·Cas numéros correspondent à la liste des pièces.



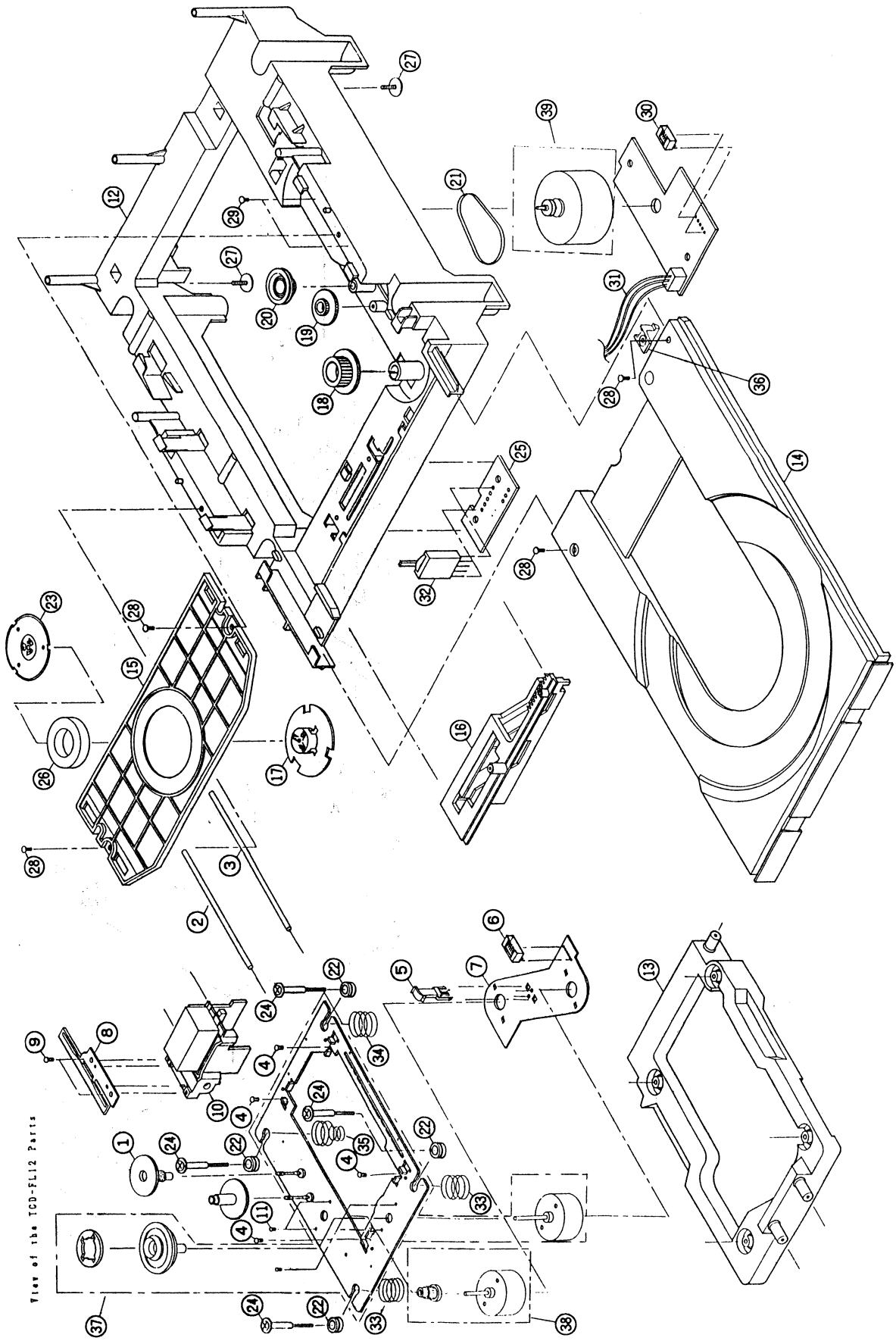
HTC-15(Cabinet) HTC-15(Coffret)

·Nos. are reference Nos. of parts list.
·Cas numéros correspondent à la liste des pièces.



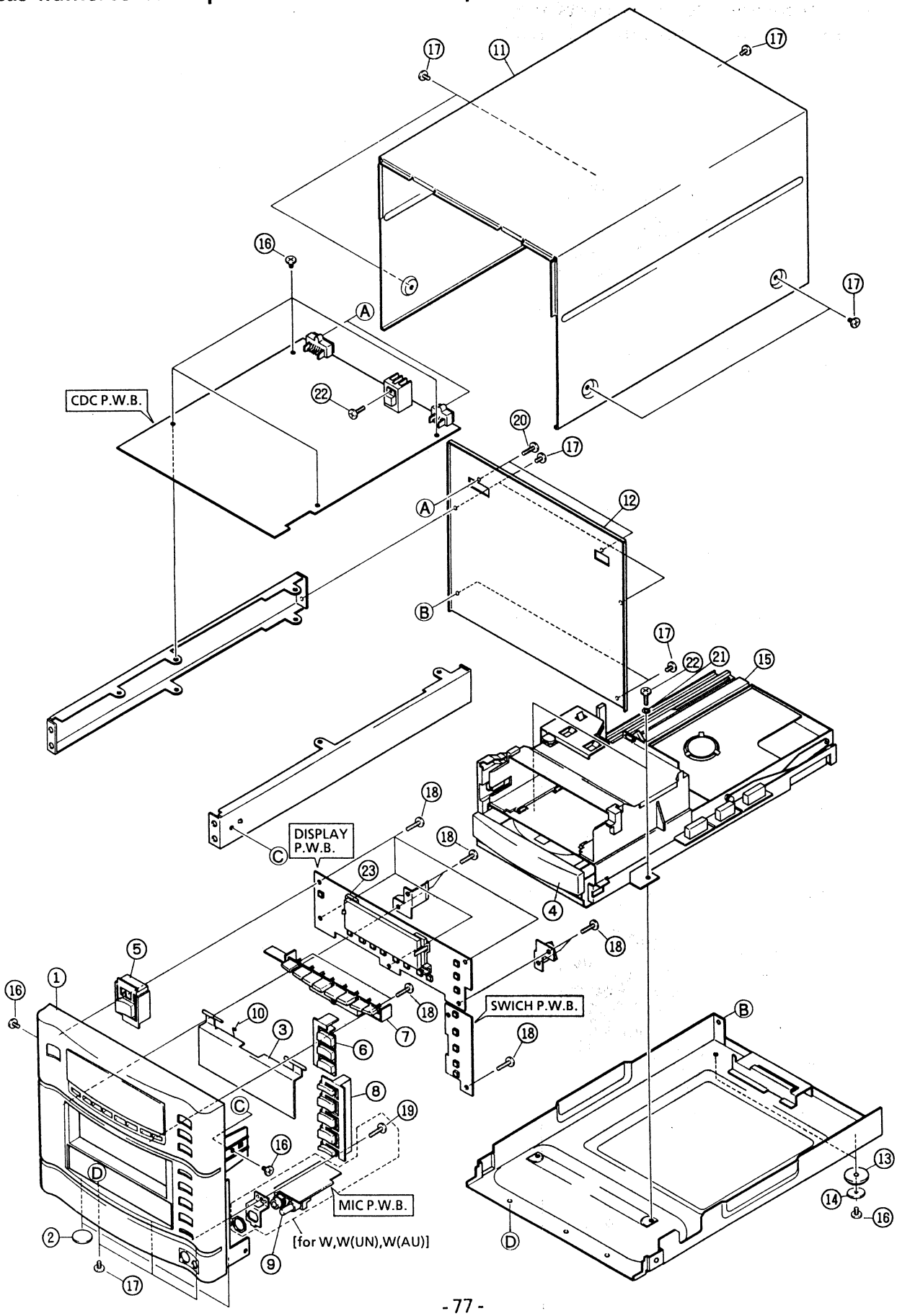
(CD Mechanism) · (Mécanisme de platine CD)
HTC-15

·Nos. are reference Nos. of parts list.
·Cas numéros correspondent à la liste des pièces.



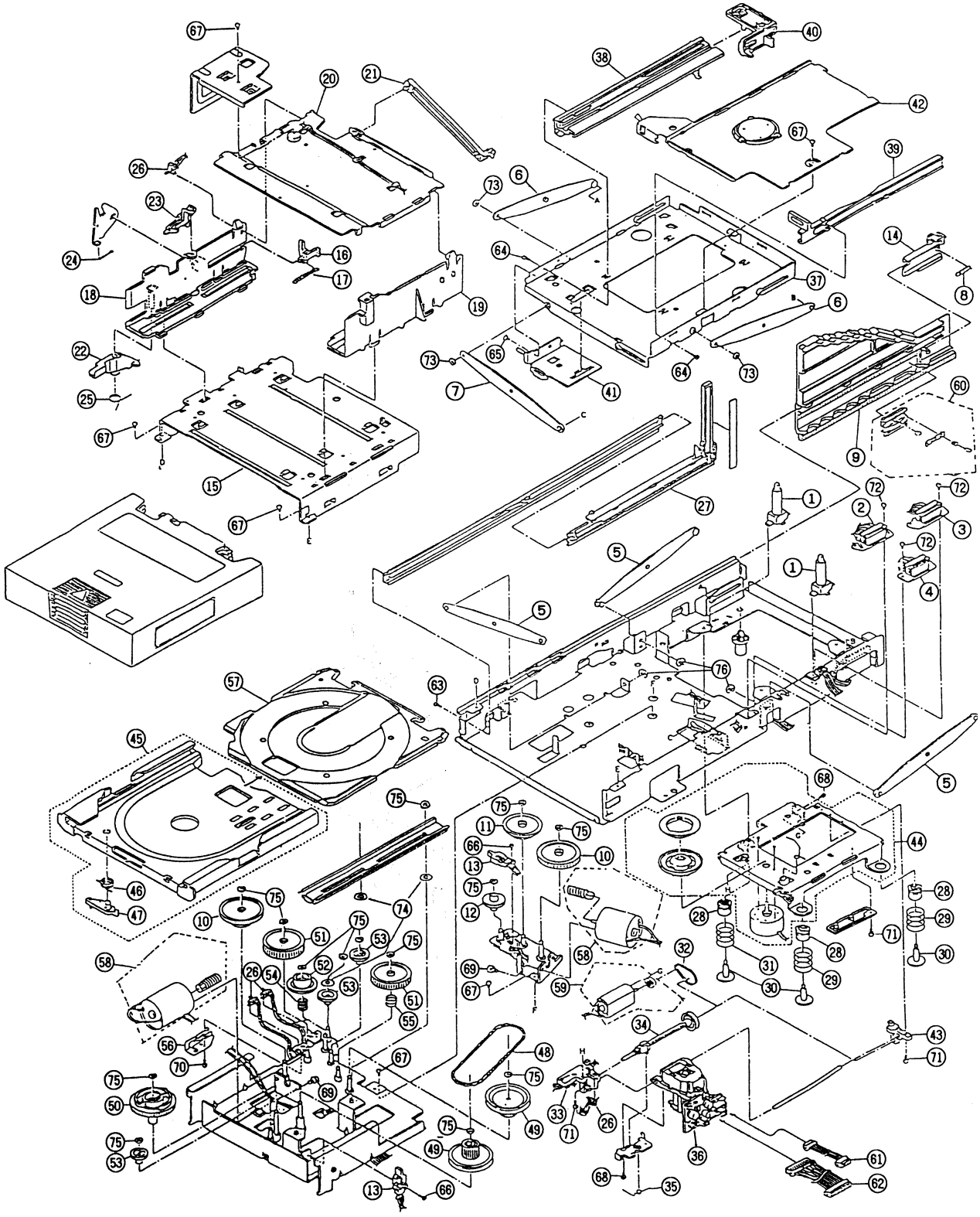
HTC-C15(Cabinet) HTC-C15(Coffret)

·Nos. are reference Nos. of parts list.
·Cas numéros correspondent à la liste des pièces.



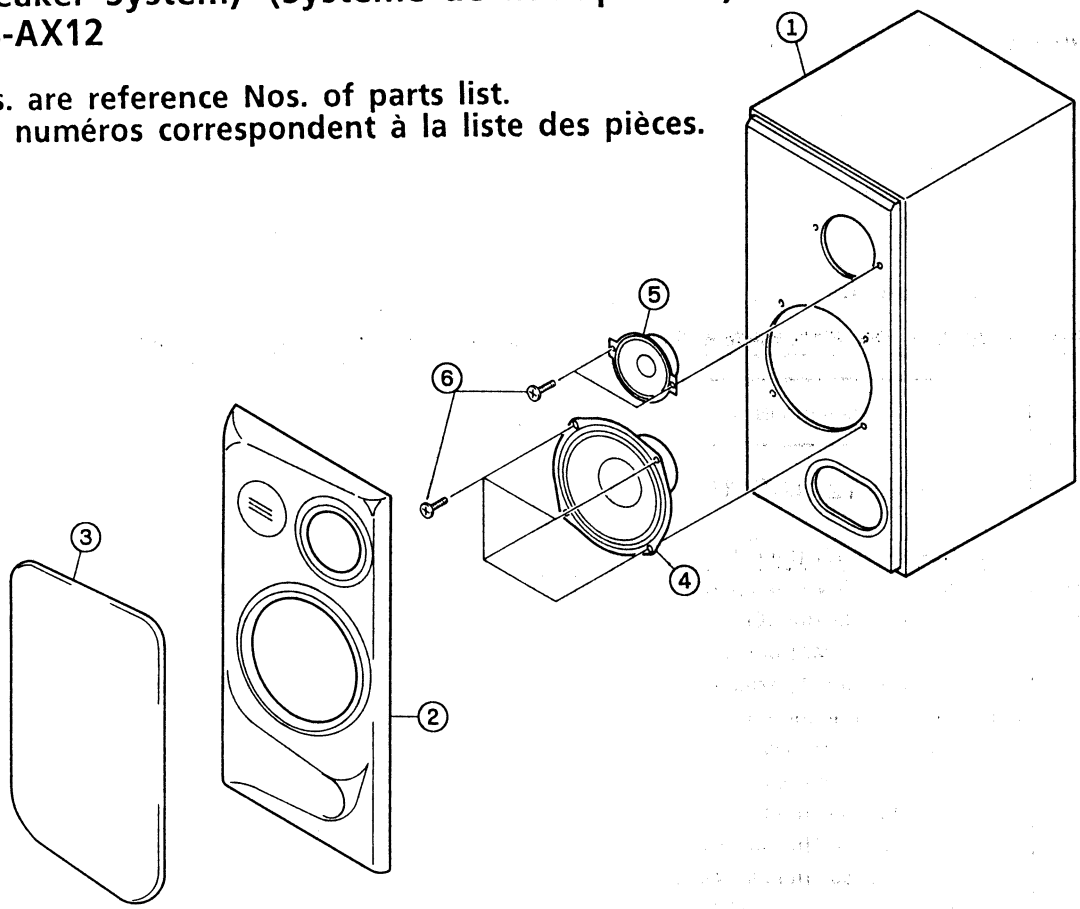
(CD Mechanism) · (Mécanisme de platine CD)
HTC-C15

·Nos. are reference Nos. of parts list.
·Cas numéros correspondent à la liste des pièces.



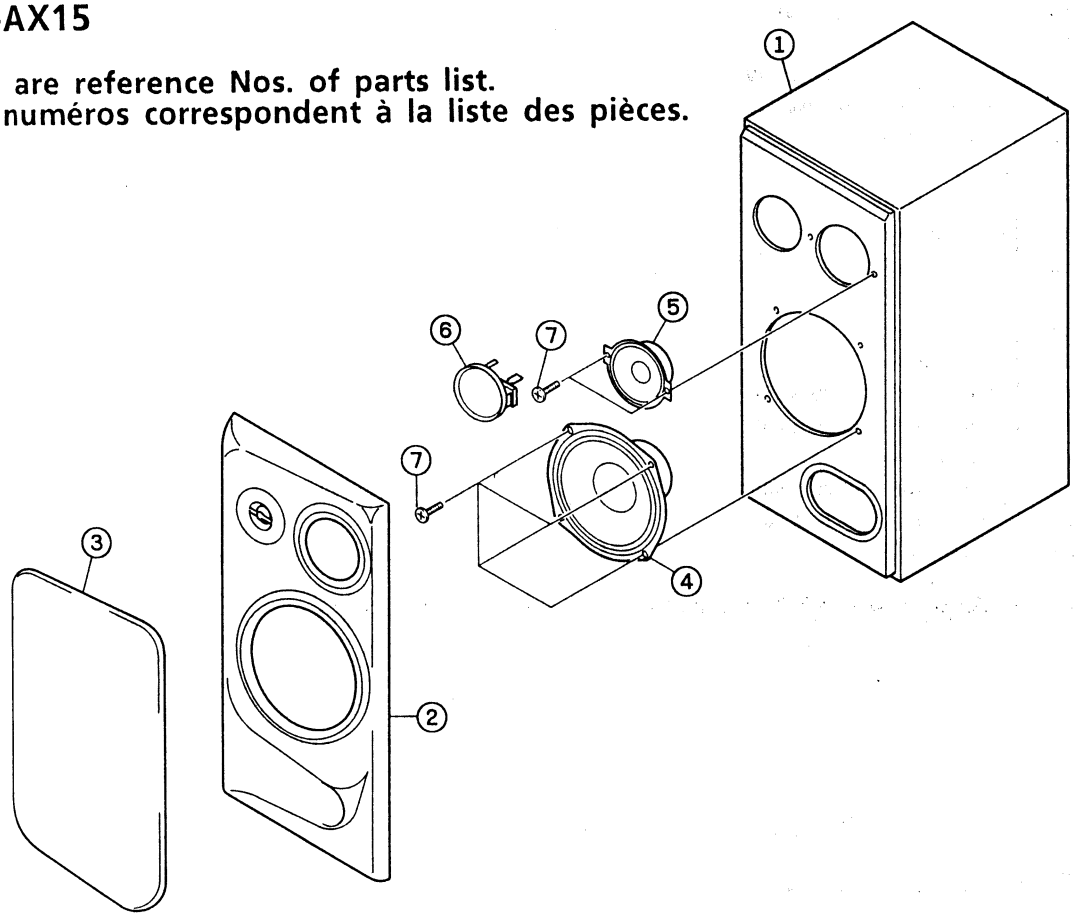
(Speaker System) · (Systéme de haut-parleur)
HS-AX12

·Nos. are reference Nos. of parts list.
·Cas numéros correspondent à la liste des pièces.



(Speaker System) · (Systéme de haut-parleur)
HS-AX15

·Nos. are reference Nos. of parts list.
·Cas numéros correspondent à la liste des pièces.



REPLACEMENT PARTS LIST · TABLEAU DES PIECES

PRODUCT SAFETY NOTE: Components marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully, the Service Manual.

ABBREVIATIONS

capacitors ..... CD:Ceramic disk, PF:Polyester film, EL:Electrolytic, PP:Polypropylene, PR:Paper, TA:Tantalum, TM:Trimmer.

Resistors ..... CF:Carbon film, CC:Carbon composition, MF:Metal oxide film, VR:Variable resistor, WW:Wire would, FR:Fuse resistor, MG:Metal glazed

Semiconductors .... TR:Transistor, DI:Diode, ZD:Zener diode, VA:Varistor, TH:Thermistor, IC:IC.

SYMBOL NO.	PART NO.	DESCRIPTION
		HAD-12/HAD-15
CP101	2137301	FM BANDPASS FILTER [for EZ]
CF201	2135003	CERAMIC FILTER SKM2 [except UC]
CF201	2134982	FM CERAMIC FILTER [for UC]
CF202	2135003	CERAMIC FILTER SKM2 [for EZ]
CF203	2135003	CERAMIC FILTER SKM2 [except UC]
CF203	2134982	FM CERAMIC FILTER [for UC]
C001	0244173	CD 0.022MF +80-20% 50V
C002	0244173	CD 0.022MF +80-20% 50V
C003	0285351	CD 100PF +-10% 50V [for MAIN P.W.B.]
C003	0890022	CD 100PF +-10% 50V [for AUDIO P.W.B.]
C004	0285351	CD 100PF +-10% 50V [for MAIN P.W.B.]
C004	0890022	CD 100PF +-10% 50V [for AUDIO P.W.B.]
C005	0890043	CD 0.01MF 16V +-20%
C006	0285352	EL 5600MF 25V (HCPS)
C007	0800083	EL 1000MF 25V
C008	0244173	CD 0.022MF +80-20% 50V
C009	0244173	CD 0.022MF +80-20% 50V
C011	0800016	EL 10MF 25V
C012	0800016	EL 10MF 25V
C013	0800049	EL 100MF 16V
C014	0800016	EL 10MF 25V
C015	0800016	EL 10MF 25V
C016	0800044	EL 47MF 50V
C017	0800053	EL 100MF 50V
C018	0800053	EL 100MF 50V
C020	0890044	CD 0.022MF +80-20% 25V
C021	0890044	CD 0.022MF +80-20% 25V
C022	0800048	EL 100MF 10V
C023	0244173	CD 0.022MF +80-20% 50V
C024	0244173	CD 0.022MF +80-20% 50V
C051	0800003	EL 1MF 50V
C052	0800003	EL 1MF 50V
C053	0890031	CD 470PF +-10% 50V
C054	0890031	CD 470PF +-10% 50V
C055	0890028	CD 330PF +-10% 50V
C056	0890028	CD 330PF +-10% 50V
C057	0800049	EL 100MF 16V
C058	0800049	EL 100MF 16V
C059	0800053	EL 100MF 50V
C060	0800053	EL 100MF 50V
C062	0800049	EL 100MF 16V
C063	0800049	EL 100MF 16V
C064	0800003	EL 1MF 50V
C065	0800049	EL 100MF 16V
C066	0880012	PF 0.022MF +-10% 50V
C067	0800026	EL 2.2MF 50V
C068	0800023	EL 22MF 16V
C069	0880016	PF 0.1MF +-10% 50V
C070	0880016	PF 0.1MF +-10% 50V
C071	0880016	PF 0.1MF +-10% 50V
C072	0880016	PF 0.1MF +-10% 50V
C073	0240012	CD 1000PF 50V +-10% [for EZ]
C074	0240012	CD 1000PF 50V +-10% [for EZ]
C075	0240012	CD 1000PF 50V +-10% [for EZ]
C076	0240012	CD 1000PF 50V +-10% [for EZ]
C077	0890043	CD 0.01MF 16V +-20% [for EZ]
C077	0800053	EL 100MF 50V [except EZ]
C078	0890043	CD 0.01MF 16V +-20% [for EZ]
C080	0890043	CD 0.01MF 16V +-20% [for EZ]
C101	0890009	CD 12PF +-5% 50V
C102	0880014	PF 0.047MF +-10% 50V
C103	0890015	CD 33PF +-20% 50V
C105	0800103	EL 0.22MF 50V [for EZ]
C106	0800003	EL 1MF 50V [for EZ]
C107	0890044	CD 0.022MF +80-20% 25V [for EZ]
C108	0890016	CD 39PF +-5% 50V [for EZ]
C109	0890016	CD 39PF +-5% 50V [for EZ]
C110	0890044	CD 0.022MF +80-20% 25V
C111	0890044	CD 0.022MF +80-20% 25V [for E,EBS]
C151	0230654	CD 12PF 50V +-5% [for UC]
C151	0230655	CD 13PF 50V +-5% [except UC]
C152	0880012	PF 0.022MF +-10% 50V
C153	0279333	PP 390PF 100V +-5%
C154	0230656	CD 15PF 50V +-5%
C155	1246451	CD 30PF 50V +-5% [for E, EBS, EZ]
C156	0880012	PF 0.022MF +-10% 50V [except UC]
C157	H279344	PP 2700PF 100V +-5%[for E, EBS,EZ]
C157	H279345	PP 2700PF 100V +-5% [for W,WUN,WAU]
C158	0246465	CD 110PF +-5% 50V [for E, EBS,EZ]
C159	0890008	CD 10PF +-5% 50V [for W,WUN,WAU]
C181	02528792	EL 3.3 JICRO F 50V
C182	0890037	CD 2200PF +-20% 16V
C183	0890044	CD 0.022MF +80-20% 25V
C184	08800103	EL 0.22MF 50V

PRODUCT SAFETY NOTE: Components marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully, the Service Manual.

SYMBOL NO.	PART NO.	DESCRIPTION
C184	0890037	CD 2200PF +-20% 16V W [for ,WUN,WAU]
C185	0800003	EL 1MF 50V [for E, EBS, EZ]
C185	02528732	EL 0.22MF 50V [for W,WUN, WAU]
C186	H240068	CD 0.1MF 50V
C201	0890044	CD 0.022MF +80-20% 25V
C202	0890044	CD 0.022MF +80-20% 25V
C203	0890044	CD 0.022MF +80-20% 25V
C204	0890043	CD 0.01MF 16V +-20%
C205	H240067	CD 0.047MF 50V +80%
C206	0890044	CD 0.022MF +80-20% 25V
C207	0800003	EL 1MF 50V
C208	0890041	CD 6800PF +-30% 16V
C209	0890044	CD 0.022MF +80-20% 25V
C210	0800015	EL 10MF 16V [for EZ]
C211	0800016	EL 10MF 25V
C212	0800003	EL 1MF 50V
C213	0800105	EL 0.33MF 50V
C214	0890032	CD 560PF +-10% 50V [for EZ]
C215	0890043	CD 0.01MF 16V +-20% [except UC]
C215	0890044	CD 0.022MF +80-20% 25V [for UC]
C216	0890043	CD 0.01MF 16V +-20% [except UC]
C216	0890044	CD 0.022MF +80-20% 25V [for UC]
C217	0890037	CD 2200PF +-20% 16V [except UC]
C217	0890043	CD 0.01MF 16V +-20% [for UC]
C218	0890037	CD 2200PF +-20% 16V [except UC]
C218	0890043	CD 0.01MF 16V +-20% [for UC]
C219	0800015	EL 10MF 16V
C220	0800015	EL 10MF 16V
C221	0890039	CD 4700PF +-20% 16V
C222	0890039	CD 4700PF +-20% 16V
C225	0890043	CD 0.01MF 16V +-20%
C226	0890044	CD 0.022MF +80-20% 25V
C227	0800015	EL 10MF 16V
C228	0800012	EL 4.7MF 50V
C229	0890044	CD 0.022MF +80-20% 25V
C230	0245552M	CD 0.047MF 50V +80%
C231	0800041	EL 47MF 16V [for HAD-15]
C232	0800003	EL 1MF 50V
C233	0890015	CD 33PF +-20% 50V
C234	0890044	CD 0.022MF +80-20% 25V
C235	0240068	CD 0.1MF +80-20% 50V [for EZ]
C236	0240067	CD 0.047MF +-80% 50V [for EZ]
C301	0890119	CD 27PF +-5% 50V
C302	0890119	CD 27PF +-5% 50V
C303	0890022	CD 100PF +-10% 50V
C304	0890022	CD 100PF +-10% 50V
C305	0890022	CD 100PF +-10% 50V
C307	0800039	EL 47MF 10V
C308	0245552M	CD 0.047MF 50V +80%
C401	0890033	CD 680PF +-10% 50V
C402	0890033	CD 680PF +-10% 50V
C403	0890033	CD 680PF +-10% 50V
C404	0890033	CD 680PF +-10% 50V
C405	0890029	CD 390PF +-10% 50V
C406	0890029	CD 390PF +-10% 50V
C407	0890029	CD 390PF +-10% 50V
C408	0890029	CD 390PF +-10% 50V
C409	0800041	EL 47MF 16V
C410	0800041	EL 47MF 16V
C411	0880011	PF 0.015MF +-10% 50V
C412	0880011	PF 0.015MF +-10% 50V
C413	0800012	EL 4.7MF 50V
C414	0800049	EL 100MF 16V
C415	0800012	EL 4.7MF 50V
C416	0800012	EL 4.7MF 50V
C417	0800012	EL 4.7MF 50V
C418	0800012	EL 4.7MF 50V
C419	0800012	EL 4.7MF 50V
C420	0800015	EL 10MF 16V
C421	0800103	EL 0.22MF 50V
C422	0800103	EL 0.22MF 50V
C423	0800003	EL 1MF 50V
C424	0800003	EL 1MF 50V
C425	0800015	EL 10MF 16V
C426	0800105	EL 0.33MF 50V
C427	02528722	EL 0.15MF 50V +-20%
C428	0800041	EL 47MF 16V
C429	0800015	EL 10MF 16V
C430	0800015	EL 10MF 16V
C431	0890026	CD 220PF +-10% 50V
C432	0890026	CD 220PF +-10% 50V
C433	1279332	CAPACITOR STYROL 6800PF 100V
C434	0880011	PF 0.015MF +-10% 50V
C435	0800015	EL 10MF 16V
C436	0880008	PF 6800PF +-10% 50V
C437	0880006	PF 3300PF +-10% 50V
C438	0880006	PF 3300PF +-10% 50V
C439	0800003	EL 1MF 50V
C440	0800003	EL 1MF 50V
C441	0800015	EL 10MF 16V
C442	0800012	EL 4.7MF 50V
C443	0890043	CD 0.01MF 16V +-20%
C444	0800003	EL 1MF 50V
C445	0800007	EL 3.3MF 50V
C446	0800012	EL 4.7MF 50V
C447	0800012	EL 4.7MF 50V
C448	0800012	EL 4.7MF 50V
C449	0800012	EL 4.7MF 50V
C450	0800003	EL 1MF 50V
C451	0800003	EL 1MF 50V
C452	0890034	CD 820PF +-10% 50V
C453	0890034	CD 820PF +-10% 50V
C454	0800105	EL 0.33MF 50V
C455	0800105	EL 0.33MF 50V
C456	0880006	PF 3300PF +-10% 50V
C457	0880006	PF 3300PF +-10% 50V
C458	0880009	PF 0.01MF +-10% 50V
C459	0890039	CD 4700PF +-20% 16V
C460	0800003	EL 1MF 50V

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SYMBOL NO.	PART NO.	DESCRIPTION
C461	0800023	EL 22MF 16V
C462	0800047	EL 100MF 6.3V
C463	0890034	CD 820PF +-10% 50V
C464	0890034	CD 820PF +-10% 50V
C465	0800058	EL 220MF 16V [for HAD-15]
C501	0890024	EL 150PF +-10% 50V
C502	0890024	CD 150PF +-10% 50V
C503	0800003	EL 1MF 50V
C504	0800003	EL 1MF 50V
C505	0890027	CD 270PF +-10% 50V
C506	0890027	CD 270PF +-10% 50V
C507	0800015	EL 10MF 16V
C508	0800015	EL 10MF 16V
C509	0800007	EL 3.3MF 50V
C510	0800007	EL 3.3MF 50V
C511	0890017	CD 47PF 50V +-5%
C512	0890017	CD 47PF 50V +-5%
C513	0890018	CD 56PF +-10% 50V
C514	0890018	CD 56PF +-10% 50V
C515	0800015	EL 10MF 16V
C516	0800015	EL 10MF 16V
C517	0800007	EL 3.3MF 50V
C518	0800007	EL 3.3MF 50V
C519	0800005	EL 2.2MF 50V
C520	0800005	EL 2.2MF 50V
C521	0800103	EL 0.22MF 50V
C522	0800103	EL 0.22MF 50V
C523	0800003	EL 1MF 50V [for HAD-15]
C524	0880016	PF 0.1MF +-10% 50V
C525	0880016	PF 0.1MF +-10% 50V
C526	0800041	EL 47MF 16V
C527	0890044	CD 0.022MF +80-20% 25V
C551	0890038	CD 3300PF +-20% 16V [for HAD-15]
C552	0800015	EL 10MF 16V
C553	0800144	EL 100MF 10V
C554	0890035	CD 1000PF +-10% 50V [for HAD-15]
C555	0800057	EL 220MF 10V [for HAD-15]
C901	0800001	EL 0.47MF 50V
C902	0800001	EL 0.47MF 50V
C903	0252969	EL 2200MF 25V
C904	0252969	EL 2200MF 25V
C905	0800018	EL 10MF 50V
C906	0800049	EL 100MF 16V
C951	0890044	CD 0.022MF +80-20% 25V [for HAD-12]
RA551	2793521	RESISTOR NETWORK 100KX12 (HCPS) [for HAD-15]
RA552	2793522	RESISTOR NETWORK 100KX6 (HCPS) [for HAD-15]
RY051	2641321	RELAY 24 V [for HAD-15]
RY051	2641341	RELAY 12V [for HAD-12]
⚠R001	01390052	CF 2.7M OHM 1/2W +-10% [for UC]
R002	0700058	CF 22K OHM +-5% 1/16W
R003	01132952	CF 470 OHM 1/2W +-5%
R004	01133652	CF 1K OHM 1/2W +-5%
R005	01133652	CF 1K OHM 1/2W +-5%
⚠R059	0110621	RESISTOR 100OHM +-5% RN1/4B
⚠R060	0110621	RESISTOR 100OHM +-5% RN1/4B
R061	0700056	CF 15K OHM +-5% 1/16W
R062	0700056	CF 15K OHM +-5% 1/16W
R063	0700067	CF 100K OHM +-5% 1/16W
R064	0700067	CF 100K OHM +-5% 1/16W
R065	0700063	CF 47K OHM +-5% 1/16W
R066	0129531	CF 10 OHM 1/4W +-5% [for EZ]
R067	0129531	CF 10 OHM 1/4W +-5% [for EZ]
R068	01132012	CF 10 OHM 1/2W +-5%
R069	01132012	CF 10 OHM 1/2W +-5%
R070	01132012	CF 10 OHM 1/2W +-5%
R071	01132012	CF 10 OHM 1/2W +-5%
R072	0700053	CF 8.2K OHM +-5% 1/16W
R073	0700067	CF 100K OHM +-5% 1/16W
R074	0700058	CF 22K OHM +-5% 1/16W
R075	0700041	CF 1K OHM +-5% 1/16W
R076	0110125	MF 150 OHM +-5% 1W [for HAD-12]
R076	0110133	MF 330 OHM +-5% 1W [for HAD-15]
R077	0110233	MF 330 OHM +-5% 2W
R078	0110233	MF 330 OHM +-5% 2W
R079	0700063	CF 47K OHM +-5% 1/16W
R080	0700045	CF 2.2K OHM +-5% 1/16W
R081	0700058	CF 22K OHM +-5% 1/16W
R082	0700055	CF 12K OHM +-5% 1/16W
R084	0700067	CF 100K OHM +-5% 1/16W
R101	0700027	CF 100K OHM +-5% 1/16W [for EZ]
R102	0700046	CF 2.7K OHM +-5% 1/16W
R104	0700067	CF 100K OHM +-5% 1/16W [for EZ]
R105	0700067	CF 100K OHM +-5% 1/16W [for EZ]
R106	0700027	CF 100K OHM +-5% 1/16W [for EZ]
R107	0700054	CF 10K OHM +-5% 1/16W [for EZ]
R108	0700042	CF 1.2K OHM +-5% 1/16W [for EZ]
R109	0700067	CF 100K OHM +-5% 1/16W [for EZ]
R110	0113226	CF 56 OHM +-5% 1/2W [for EZ]
R110	0129565	CF 150 OHM 1/4W +-5% [except EZ]
R152	0700063	CF 47K OHM +-5% 1/16W [except UC]
R153	0700054	CF 10K OHM +-5% 1/16W
R154	0700072	CF 220K OHM +-5% 1/16W
R155	0700063	CF 47K OHM +-5% 1/16W [except UC]
R156	0700063	CF 47K OHM +-5% 1/16W [except UC]
R157	0700054	CF 10K OHM +-5% 1/16W [except UC]
R158	0700072	CF 220K OHM +-5% 1/16W [except UC]
R159	0700063	CF 47K OHM +-5% 1/16W [except UC]
R181	0700052	CF 6.8K OHM +-5% 1/16W

AX12
AXC12
AX15
AXC15

PRODUCT SAFETY NOTE: Components marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully, the Service Manual.

SYMBOL NO.	PART NO.	DESCRIPTION
R182	0700038	CF 680 OHM +-5% 1/16W
R183	0700045	CF 2.2K OHM +-5% 1/16W
R184	0700043	CF 1.5K OHM +-5% 1/16W
R185	0700052	CF 6.8K OHM +-5% 1/16W [for E,EBS,EZ]
R185	0700045	CF 2.2K OHM +-5% 1/16W [for W,WUN,WAU]
R186	0700054	CF 10K OHM +-5% 1/16W [except UC]
R187	0700052	CF 6.8K OHM +-5% 1/16W [except UC]
R188	0700041	CF 1K OHM +-5% 1/16W [for E,EBS,EZ]
R188	0700043	CF 1.5K OHM +-5% 1/16W [for W,WUN,WAU]
R201	0700034	CF 330 OHM +-5% 1/16W [except EZ]
R202	0700034	CF 330 OHM +-5% 1/16W
R203	0700041	CF 1K OHM +-5% 1/16W
R204	0700043	CF 1.5K OHM +-5% 1/16W
R205	0700035	CF 390 OHM +-5% 1/16W
R206	0700055	CF 12K OHM +-5% 1/16W
R207	0700053	CF 8.2K OHM +-5% 1/16W
R208	0700058	CF 22K OHM +-5% 1/16W
R209	0113632	CF 5.1K OHM 1/6W +-5%
R210	0700044	CF 1.8K OHM +-5% 1/1W [for EZ]
R210	0700042	CF 1.2K OHM +-5% 1/16W [except UC,EZ]
R210	0700041	CF 1K OHM +-5% 1/16W [for UC]
R211	0700051	CF 5.6K OHM +-5% 1/16W
R212	0700051	CF 5.6K OHM +-5% 1/16W
R213	0700043	CF 1.5K OHM +-5% 1/16W
R214	0700043	CF 1.5K OHM +-5% 1/16W
R215	0700053	CF 8.2K OHM +-5% 1/16W
R216	0700053	CF 8.2K OHM +-5% 1/16W
R217	0700053	CF 8.2K OHM +-5% 1/16W [for UC]
R217	0700058	CF 22K OHM +-5% 1/16W [except UC]
R218	0700054	CF 10K OHM +-5% 1/16W
R219	0700061	CF 33K OHM +-5% 1/16W
R220	0700054	CF 10K OHM +-5% 1/16W
R222	0700041	CF 1K OHM +-5% 1/16W
R223	0700054	CF 10K OHM +-5% 1/16W
R224	0700056	CF 15K OHM +-5% 1/16W
R225	0700041	CF 1K OHM +-5% 1/16W
R226	0700053	CF 8.2K OHM +-5% 1/16W
R227	0110601	RESISTOR FUSE 10 OHM 1/4W +-5%
R228	0700049	CF 4.7K OHM +-5% 1/16W
R229	0700049	CF 4.7K OHM +-5% 1/16W
R230	0700047	CF 3.3K OHM +-5% 1/16W
R231	0700041	CF 1K OHM +-5% 1/16W
R301	0700045	CF 2.2K OHM +-5% 1/16W
R302	0700045	CF 2.2K OHM +-5% 1/16W
R303	0700045	CF 2.2K OHM +-5% 1/16W
R304	0700054	CF 10K OHM +-5% 1/16W
R305	0700054	CF 10K OHM +-5% 1/16W
R306	01132952	CF 470 OHM 1/2W +-5%
R307	0700067	CF 100K OHM +-5% 1/16W
R401	0700067	CF 100K OHM +-5% 1/16W
R402	0700067	CF 100K OHM +-5% 1/16W
R403	0700067	CF 100K OHM +-5% 1/16W
R404	0700067	CF 100K OHM +-5% 1/16W
R405	0700024	CF 56 OHM +-5% 1/16W
R406	0700024	CF 56 OHM +-5% 1/16W
R407	0129571	CF 270 OHM 1/4W +-5% [for HAD-15]
R408	01132892	CF 150 OHM 1/2W +-5%
R409	0700049	CF 4.7K OHM +-5% 1/16W
R410	0700049	CF 4.7K OHM +-5% 1/16W
R411	0700081	CF 1.0M OHM +-5% 1/16W
R412	0700059	CF 27K OHM +-5% 1/16W
R413	0700052	CF 6.8K OHM +-5% 1/16W
R414	0700052	CF 6.8K OHM +-5% 1/16W
R423	0700054	CF 10K OHM +-5% 1/16W
R424	0700058	CF 22K OHM +-5% 1/16W
R425	0700041	CF 1K OHM +-5% 1/16W
R426	0700058	CF 22K OHM +-5% 1/16W
R427	0700058	CF 22K OHM +-5% 1/16W
R429	0700051	CF 5.6K OHM +-5% 1/16W
R430	0700056	CF 15K OHM +-5% 1/16W
R431	0700051	CF 5.6K OHM +-5% 1/16W
R432	0700056	CF 15K OHM +-5% 1/16W
R433	0700051	CF 5.6K OHM +-5% 1/16W
R434	0700054	CF 10K OHM +-5% 1/16W
R435	0700075	CF 390K OHM +-5% 1/16W
R436	0700054	CF 10K OHM +-5% 1/16W
R437	0700054	CF 10K OHM +-5% 1/16W
R438	0700054	CF 10K OHM +-5% 1/16W
R439	01132912	CF 220 OHM 1/2W +-5%
R440	0700053	CF 8.2K OHM +-5% 1/16W
R441	0700053	CF 8.2K OHM +-5% 1/16W
R442	0129509	CF 2.2 OHM 1/4W +-5%
R443	0700056	CF 15K OHM +-5% 1/16W
R444	0700056	CF 15K OHM +-5% 1/16W
R445	0700066	CF 82K OHM +-5% 1/16W [for HAD-12]
R445	0700056	CF 15K OHM +-5% 1/16W [for HAD-15]
R446	0700016	CF 15 OHM +-5% 1/16W
R447	0700059	CF 27K OHM +-5% 1/16W
R448	0700052	CF 6.8K OHM +-5% 1/16W
R449	0700049	CF 4.7K OHM +-5% 1/16W
R450	0700041	CF 1K OHM +-5% 1/16W
R451	0700067	CF 100K OHM +-5% 1/16W
R452	0700054	CF 10K OHM +-5% 1/16W
R453	0700042	CF 1.2K OHM +-5% 1/16W
R454	0700054	CF 10K OHM +-5% 1/16W
R455	0700054	CF 10K OHM +-5% 1/16W
R456	0700054	CF 10K OHM +-5% 1/16W
R457	0700045	CF 2.2K OHM +-5% 1/16W
R458	0700042	CF 1.2K OHM +-5% 1/16W
R459	0700049	CF 4.7K OHM +-5% 1/16W
R460	0700041	CF 1K OHM +-5% 1/16W
R461	0700041	CF 1K OHM +-5% 1/16W
R462	0700054	CF 10K OHM +-5% 1/16W
R463	0700049	CF 4.7K OHM +-5% 1/16W
R464	0700054	CF 10K OHM +-5% 1/16W

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SYSMBOL NO.	PART NO.	DESCRIPTION	SYSMBOL NO.	PART NO.	DESCRIPTION
R464	0700054	CF 10K OHM +-5% 1/16W	R517	0700041	CF 1K OHM +-5% 1/16W
R465	0700054	CF 10K OHM +-5% 1/16W	R518	0700041	CF 1K OHM +-5% 1/16W
R466	0700054	CF 10K OHM +-5% 1/16W	R519	0700064	CF 56K OHM +-5% 1/16W
R467	0700063	CF 47K OHM +-5% 1/16W	R520	0700064	CF 56K OHM +-5% 1/16W
R468	0700054	CF 10K OHM +-5% 1/16W	R521	0700053	CF 8.2K OHM +-5% 1/16W
R469	0700054	CF 10K OHM +-5% 1/16W	R522	0700053	CF 8.2K OHM +-5% 1/16W
R470	0700054	CF 10K OHM +-5% 1/16W [for HAD-12]	R523	0700046	CF 2.7K OHM +-5% 1/16W
R471	0700054	CF 10K OHM +-5% 1/16W	R524	0700046	CF 2.7K OHM +-5% 1/16W
R472	0700041	CF 1K OHM +-5% 1/16W	R525	0700029	CF 150 OHM +-5% 1/16W
R473	0700054	CF 10K OHM +-5% 1/16W	R526	0700029	CF 150 OHM +-5% 1/16W
R474	0700054	CF 10K OHM +-5% 1/16W	R527	0700063	CF 47K OHM +-5% 1/16W
R475	0700054	CF 10K OHM +-5% 1/16W	R528	0700063	CF 47K OHM +-5% 1/16W
R476	0700041	CF 1K OHM +-5% 1/16W	R529	0700041	CF 1K OHM +-5% 1/16W
R477	0700081	CF 1.0M OHM +-5% 1/16W	R530	0700063	CF 47K OHM +-5% 1/16W
R478	0700054	CF 10K OHM +-5% 1/16W	R531	0700063	CF 47K OHM +-5% 1/16W
R479	0700054	CF 10K OHM +-5% 1/16W	R532	0700033	CF 270 OHM +-5% 1/16W
R480	0700054	CF 10K OHM +-5% 1/16W	R533	0700033	CF 270 OHM +-5% 1/16W
R481	0700054	CF 10K OHM +-5% 1/16W	R534	0700063	CF 47K OHM +-5% 1/16W
R482	0700054	CF 10K OHM +-5% 1/16W	R535	0700063	CF 47K OHM +-5% 1/16W
R483	0700054	CF 10K OHM +-5% 1/16W	R536	0700058	CF 22K OHM +-5% 1/16W [for HAD-15]
R484	0700054	CF 10K OHM +-5% 1/16W	R537	0700058	CF 22K OHM +-5% 1/16W [for HAD-15]
R485	0700054	CF 10K OHM +-5% 1/16W	R538	0700045	CF 2.2K OHM +-5% 1/16W
R486	0700056	CF 15K OHM +-5% 1/16W	R539	0700045	CF 2.2K OHM +-5% 1/16W
		[for E,EBS,EZ]	R540	0700051	CF 5.6K OHM +-5% 1/16W
R486	0700061	CF 33K OHM +-5% 1/16W	R541	0700051	CF 5.6K OHM +-5% 1/16W
		[for W,WUN,WAU]	R542	0700043	CF 1.5K OHM +-5% 1/16W
R487	0700054	CF 10K OHM +-5% 1/16W	R543	0700043	CF 1.5K OHM +-5% 1/16W
R488	0700045	CF 2.2K OHM +-5% 1/16W	R544	0700067	CF 100K OHM +-5% 1/16W
R489	0700045	CF 2.2K OHM +-5% 1/16W	R545	0700067	CF 100K OHM +-5% 1/16W
R490	0700045	CF 2.2K OHM +-5% 1/16W	R546	0700054	CF 10K OHM +-5% 1/16W
R491	0700045	CF 2.2K OHM +-5% 1/16W	R547	0700054	CF 10K OHM +-5% 1/16W
R492	0700054	CF 10K OHM +-5% 1/16W	R551	0700034	CF 330 OHM +-5% 1/16W [for HAD-12]
R493	0700049	CF 4.7K OHM +-5% 1/16W	R551	0700073	CF 270KOHM +-5% 1/16W [for HAD-15]
R494	0700049	CF 4.7K OHM +-5% 1/16W	R552	0700034	CF 330 OHM +-5% 1/16W [for HAD-12]
R495	0700054	CF 10K OHM +-5% 1/16W	R552	0700073	CF 270KOHM +-5% 1/16W [for HAD-15]
R496	0700058	CF 22K OHM +-5% 1/16W	R553	0700058	CF 22K OHM +-5% 1/16W [for HAD-15]
R497	0700047	CF 3.3K OHM +-5% 1/16W	R554	0700041	CF 1K OHM +-5% 1/16W
R498	0700058	CF 22K OHM +-5% 1/16W	R555	0700059	CF 27K OHM +-5% 1/16W [for HAD-15]
R499	0700042	CF 1.2K OHM +-5% 1/16W	R556	0700049	CF 4.7K OHM +-5% 1/16W [for HAD-15]
R501	0700062	CF 39K OHM +-5% 1/16W	R557	H113220	RD 18OHM +-5% 1/2W [for HAD-15]
R502	0700062	CF 39K OHM +-5% 1/16W	R558	H113220	RD 18OHM +-5% 1/2W [for HAD-15]
R503	0700053	CF 8.2K OHM +-5% 1/16W	R559	H113220	RD 18OHM +-5% 1/2W [for HAD-15]
R504	0700053	CF 8.2K OHM +-5% 1/16W	R560	H113220	RD 18OHM +-5% 1/2W [for HAD-15]
R505	0700045	CF 2.2K OHM +-5% 1/16W	R561	0700021	CF 33OHM +-5% 1/16W
R506	0700063	CF 47K OHM +-5% 1/16W	R901	0174577	MF 3.3K OHM 1/16W +-1%
R507	0700041	CF 1K OHM +-5% 1/16W	R902	0174586	MF 6.8K OHM 1/16W +-1%
R508	0700041	CF 1K OHM +-5% 1/16W	R903	0174569	MF 1.6K OHM 1/16W +-1%
R509	0700067	CF 100K OHM +-5% 1/16W	R904	0700046	CF 2.7K OHM +-5% 1/16W
R510	0700067	CF 100K OHM +-5% 1/16W	R905	0700049	CF 4.7K OHM +-5% 1/16W
R511	0700054	CF 10K OHM +-5% 1/16W	R906	0700067	CF 100K OHM +-5% 1/16W
R512	0700054	CF 10K OHM +-5% 1/16W	R907	0700065	CF 68K OHM +-5% 1/16W
R513	0700049	CF 4.7K OHM +-5% 1/16W	R908	0700055	CF 12K OHM +-5% 1/16W
R514	0700049	CF 4.7K OHM +-5% 1/16W	R909	0174577	MF 3.3K OHM 1/16W +-1%
R515	0700067	CF 100K OHM +-5% 1/16W	R910	0174586	MF 6.8K OHM 1/16W +-1%
R516	0700067	CF 100K OHM +-5% 1/16W	R911	0174569	MF 1.6K OHM 1/16W +-1%

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SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
R912	0174576	MF 3K OHM 1/16W +-1%	VR408	0160325	VR 100K OHM (HCPS)
R913	0174571	MF 1.8K OHM 1/16W +-1%	VR501	0157901	ROTARY VR 50K OHM (WITH MOTOR)
R914	0174571	MF 1.8K OHM 1/16W +-1%	VR901	0160326	SEMI VR 3K OHM (HCPS)
R915	0174576	MF 3K OHM 1/16W +-1%	VR902	0160326	SEMI VR 3K OHM (HCPS)
R916	0700045	CF 2.2K OHM +-5% 1/16W	IC001	2366361	IC AN7805
R917	0700054	CF 10K OHM +-5% 1/16W	IC002	2004602	IC PQ09RA1
R918	0700045	CF 2.2K OHM +-5% 1/16W	IC003	2366367	IC AN7812
R919	0700054	CF 10K OHM +-5% 1/16W	IC051	2373361	MODULE STK 401-020 [for HAD-12]
R920	0700058	CF 22K OHM +-5% 1/16W	IC051	2373331	IC STK401-050 [for HAD-15]
R921	0700058	CF 22K OHM +-5% 1/16W	IC052	2387582	IC UPC1237H HA
R922	0174564	MF 1K OHM 1/16W +-1%	IC201	23684312	IC AN278
R923	0174564	MF 1K OHM 1/16W +-1%	IC202	2008521	IC LA1851N
R924	0174563	MF 910 OHM 1/16W +-1%	IC301	2385201	IC,LC7218
R925	0174563	MF 910 OHM 1/16W +-1%	IC401	2008771	IC CXA1498S
R926	0174591	MF 10K OHM 1/16W +-1%	IC402	2003731	IC HA12134A (LINEAR)
R927	0174591	MF 10K OHM 1/16W +-1%	IC403	23684632	IC BA335
R928	0700055	CF 12K OHM +-5% 1/16W	IC404	2020291	IC BA3126N
R929	0700054	CF 10K OHM +-5% 1/16W	IC405	2001476	IC M50944-185SP
R932	0700036	CF 470K OHM +-5% 1/16W	IC406	2007432	IC S-2911R10
R933	0700054	CF 10K OHM +-5% 1/16W	IC407	2005421	IC S8054ALR (CMOS)
R934	0700041	CF 1K OHM +-5% 1/16W	IC501	2008431	IC BU4052B
R935	0700061	CF 33K OHM +-5% 1/16W	IC502	2387304	IC M5218AP
R936	0700054	CF 10K OHM +-5% 1/16W	IC503	2387304	IC M5218AP
R937	0700045	CF 2.2K OHM +-5% 1/16W	IC504	2387304	IC M5218AP
R938	0700045	CF 2.2K OHM +-5% 1/16W	IC505	23017012	IC BA6209N
R939	0700054	CF 10K OHM +-5% 1/16W	IC506	2363192	IC BU4066B
R940	0700054	CF 10K OHM +-5% 1/16W	IC551	2008761	IC BA3830S [for HAD-15]
R941	0700021	CF 33 OHM +-5% 1/16W	IC552	2008751	IC LC7566 [for HAD-15]
R942	0700041	CF 1K OHM +-5% 1/16W	IC901	2008411	IC M54567P
R943	0700044	CF 1.8K OHM +-5% 1/16W	IC951	2008711	IC BU2040
R944	0700044	CF 1.8K OHM +-5% 1/16W	Q001	2328625	TR 2SB647C SILICON 140MHZ 0.9W
R945	0700059	CF 27K OHM +-5% 1/16W	⚠Q004	2328625	TR 2SB647C SILICON 140MHZ 0.9W
R946	0700059	CF 27K OHM +-5% 1/16W	Q101	2318303	TR 2SC1740S(S) [for HAD-12 (EZ)]
R947	0700056	CF 15K OHM +-5% 1/16W	Q102	2328803	FET 2SK104(H)
R948	0700056	CF 15K OHM +-5% 1/16W	Q051	2318303	TR 2SC1740S(S)
R951	0700058	CF 22K OHM +-5% 1/16W	Q052	2328625	TR 2SB647C SILICON 140MHZ 0.9W
R952	0700067	CF 100K OHM +-5% 1/16W	Q053	2326871	TR DTC124ES
R953	0700058	CF 22K OHM +-5% 1/16W	Q054	2326871	TR DTC124ES
R954	0174571	MF 1.8K OHM 1/16W +-1%	Q151	2318303	TR 2SC1740S(S) [except UC]
R955	0174568	MF 1.5K OHM 1/16W +-1%	Q152	2318303	TR 2SC1740S(S) [except UC]
R956	0174567	MF 1.3K OHM 1/16W +-1%	Q153	2318303	TR 2SC1740S(S) [except UC]
R957	0174575	MF 2.7K OHM 1/16W +-1% (HCPS)	Q154	2318303	TR 2SC1740S(S) [except UC]
R958	0700034	CF 330 OHM +-5% 1/16W	Q181	2318303	TR 2SC1740S(S)
R959	0700034	CF 330 OHM +-5% 1/16W	Q182	2318303	TR 2SC1740S(S)
R960	0700034	CF 330 OHM +-5% 1/16W	Q183	2318303	TR 2SC1740S(S) [except UC]
R961	0700034	CF 330 OHM +-5% 1/16W	Q184	2318303	TR 2SC1740S(S) [except UC]
R962	0700034	CF 330 OHM +-5% 1/16W	Q201	2326862	TR DTA114ES
R963	0174558	MF 620 OHM 1/16W +-1%	Q202	2326871	TR DTC124ES
R964	0174559	MF 680 OHM 1/16W +-1%	Q301	2326862	TR DTA114ES
R965	0174584	MF 5.6K OHM 1/16W +-1%	Q302	2326862	TR DTA114ES
R966	0174558	MF 620 OHM 1/16W +-1%	Q303	2326862	TR DTA114ES
R967	0174559	MF 680 OHM 1/16W +-1%	Q304	2318303	TR 2SC1740S(S)
VR401	0160322	SEMI VR 10K OHM	Q401	2318303	TR 2SC1740S(S)
VR402	0160322	SEMI VR 10K OHM	Q402	2318303	TR 2SC1740S(S)
VR407	0160325	VR 100K OHM (HCPS)	Q403	2318303	TR 2SC1740S(S)

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SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
Q404	2318303	TR 2SC1740S(S)	D151	2398921	DI 1N4531T
Q405	2318303	TR 2SC1740S(S)	D152	2398921	DI 1N4531T
Q406	2318303	TR 2SC1740S(S)	D153	2397362	DI SVC321-1
Q407	2326862	TR DTA114ES	D154	2397362	DI SVC321-1
Q408	2326871	TR DTC124ES	D155	2397362	DI SVC321-1 [except UC]
Q409	2326871	TR DTC124ES	D156	2397362	DI SVC321-1 [except UC]
Q410	2319062	TR HIT5609C	D157	2398921	DI 1N4531T [for W,WUN,WAU]
Q411	2326871	TR DTC124ES	D158	2398921	DI 1N4531T [for W,WUN,WAU]
Q412	2318303	TR 2SC1740S(S)	D301	2398921	DI 1N4531T [except UC]
Q413	2318303	TR 2SC1740S(S)	D302	2398921	DI 1N4531T [except UC]
Q414	2318303	TR 2SC1740S(S)	D303	2398921	DI 1N4531T
Q415	2321322	TR 2SA844E SI 200MHZ 300MW	D401	2398921	DI 1N4531T
Q416	2326871	TR DTC124ES	D402	2398921	DI 1N4531T
Q417	2326871	TR DTC124ES	D403	2398921	DI 1N4531T
Q418	2318303	TR 2SC1740S(S)	D501	2397314	LED RLL20503PD-R15(S)
Q419	2318303	TR 2SC1740S(S)	D551	2398408	LED SLR-54DT3F (HCPS) [for HAD-12]
Q420	2318303	TR 2SC1740S(S)	D552	2398408	LED SLR-54DT3F (HCPS) [for HAD-12]
Q501	2318303	TR 2SC1740S(S)	D901	2398921	DI 1N4531T [for HAD-12]
Q502	2318303	TR 2SC1740S(S)	D903	2398062	DI 1N4001
Q503	2318303	TR 2SC1740S(S)	D904	2398062	DI 1N4001
Q504	2318303	TR 2SC1740S(S)	D905	2398062	DI 1N4001
Q551	2319052	TR HIT8050C	D906	2398062	DI 1N4001
Q901	2321322	TR 2SA844E SI 200MHZ 300MW	D951	2398406	LED SLR54MC3F
Q902	2326871	TR DTC124ES	D952	2398406	LED SLR54MC3F
Q903	2326871	TR DTC124ES	D953	2398406	LED SLR54MC3F
Q904	2319062	TR HIT5609C	D954	2398406	LED SLR54MC3F
Q905	2319062	TR HIT5609C	D956	2398405	LED SLR54VC3F
Q906	2321322	TR 2SA844E SI 200MHZ 300MW	ZD001	2331815	ZD HZ7 (B2)
Q907	2321322	TR 2SA844E SI 200MHZ 300MW	ZD002	2335043	DI HZ-22 1L
Q908	2318303	TR 2SC1740S(S)	ZD003	2331805	ZD HZ6 (B2)
Q909	2318303	TR 2SC1740S(S)	ZD301	2331797	ZD HZ5C1
Q910	2318303	TR 2SC1740S(S)	ZD501	2331787	ZD HZ4(C)1 SI
Q912	2318303	TR 2SC1740S(S)	ZD551	2331804	ZD HZ6 (B1)
Q951	2318303	TR 2SC1740S(S)	ZD901	2331817	ZD HZ7(C)1 SI
Q952	2318303	TR 2SC1740S(S)	TU101	2428661	FM TUNER PACK (HCPS) [except EZ]
D001	23374612	DIODE S4VB20	TU101	2428651	FM TUNER PACK (HCPS) [for EZ]
D002	2398062	DI 1N4001	T201	2145791	AM IFT COIL
D003	2398062	DI 1N4001	T202	2145781	FM DISCRIMINATOR COIL
D004	2398062	DI 1N4001	T203	2136313	LOW PASS FILTER [for EZ]
D005	2398062	DI 1N4001	T204	2136314	LEAK FILTER
D006	2398921	DI 1N4531T	T205	2136314	LEAK FILTER
D008	2398062	DI 1N4001	E001	2727671	FUSE HOLDER [for W,WUN,WAU]
D009	2398062	DI 1N4001	⚠F001	2727893	FUSE (2A) [for UC]
D010	2398062	DI 1N4001	⚠F001	2728072	FUSE T630mA [for HAD-12 (E,EBS,EZ)]
D011	2398062	DI 1N4001	⚠F001	2728077	FUSE T1A [for HAD-15 (E,EBS,EZ)]
D012	2398921	DI 1N4531T	⚠F002	2727891	FUSE (1.6A,125V) [for UC]
D051	2398921	DI 1N4531T	⚠F002	2728077	FUSE (T1A) [for HAD-12 (except UC)]
D052	2398921	DI 1N4531T	⚠F002	2728073	FUSE (T1.25A) [for HAD-15 (except UC)]
D053	2398921	DI 1N4531T	⚠F003	2727891	FUSE (1.6A,125V) [for UC]
D054	2398062	DI 1N4001	⚠F003	2728077	FUSE (T1A) [for HAD-12 (except UC)]
D055	2398921	DI 1N4531T	⚠F003	2728073	FUSE (T1.25A) [for HAD-15 (except UC)]
D101	2398921	DI 1N4531T	L051	2227361	AUDIO TRAP COIL [for EZ]
D102	2398921	DI 1N4531T	L052	2227361	AUDIO TRAP COIL [for EZ]
D103	2345571	DI MA700A [for EZ]	L151	2137373	AM ANT COIL(MW)
D104	2345571	DI MA700A [for EZ]	L152	2137374	AM ANT COIL(LW) [for E,EBS,EZ]

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SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
L152	2145811	SW ANT COIL [for W,WUN,WAU]	8	8691410	BT SCREW,(3X10)
L153	2136493	AM OSC COIL	9	3821931	CASSETTE DOOR SASS (R) (HCPS)
L154	2136494	LW OSC COIL [for E,EBS,EZ]	10	3821941	CASSETTE DOOR SASS (L) (HCPS)
L154	2145821	SW OSC COIL [for W,WUN,WAU]	11	4504001	LOCK PIN (HCPS)
L403	2150801	BIAS TRAP COIL	12	4450042	"E" TYPE RING
L404	2150801	BIAS TRAP COIL	13	3273691	EJECT BUTTON (R) (HCPS)
L405	2137343	BIAS OSC COIL	14	3273701	EJECT BUTTON (L) (HCPS)
S001	2636601	POWER SWITCH (HCPS) [for UC]	15	3273712	DECK OPERATION BUTTON (R) (HCPS)
S001	2636541	POWER SWITCH (HCPS)[for E,EBS,EZ]	16	3273722	DECK OPERATION BUTTON (L) (HCPS)
S401	2629061	SLIDE SWITCH	17	3273731	DOLBY BUTTON (HCPS)
S551	2600833	PUSH SWITCH	18	3831331	INDICATOR (PLAY) (HCPS)
S552	2600833	PUSH SWITCH	19	3831321	INDICATOR (REC) (HCPS)
S951	2634341	TACT SWITCH	20	3335781	EJECT SPRING (HCPS)
S952	2634341	TACT SWITCH	21	3863441	EJECT ARM (HCPS)
S953	2634341	TACT SWITCH	22	3375321	TN-1800M-267 DECK MECHA ASSY
S954	2634341	TACT SWITCH	23	3375331	TN-1800M-268P DECK MECHA ASSY
S955	2634341	TACT SWITCH	24	8699408	BT BIND HEAD SCREW (3X8)
S956	2634341	TACT SWITCH	25	8671404	3X4 DT BIND SCREW
S957	2634341	TACT SWITCH	26	3815801	DAMPER
S958	2634341	TACT SWITCH	27	3874111	DAMPER HOLDER (HCPS)
S959	2634341	TACT SWITCH	28	8681106	2X6 DT PAN HEAD SCREW
S960	2634341	TACT SWITCH	29	3471651	TOP COVER (HCPS)
S961	2634341	TACT SWITCH	30	3471761	HEAT PROTECTOR (HAD-12 except UC)
S962	2622481	SLIDE SWITCH	30	3471661	HEAT SINK COVER (HCPS) [HAD-15]
E551	2482261	FLUORESCENCE DISPLAY TUBE (HCPS) [for HAD-15]	31	3802972	HOLDER
E551	3874241	LED HOLDER (HCPS) [HAD-12]	32	3831361	FOOT (HCPS)
E552	3874241	LED HOLDER (HCPS) [HAD-12]	33	8411652	FOOT RUBBER (HCPS)
JK001	2998984	7P FG CONNECTOR (HCPS)	34	3473641	REAR PLATE ASSY [for HAD-12 (UC)]
JK051	2693681	4P TERMINAL		TS00011	REAR PLATE ASSY [for HAD-12 (E)]
JK551	2695031	HEAD PHONE JACK (HCPS)		TS00012	REAR PLATE ASSY [for HAD-12 (EBS)]
J501	2673991	2P US PIN JACK (HCPS)		TS00013	REAR PLATE ASSY [for HAD-12 (EZ)]
PG502	2998985	13P FG CONNECTOR (HCPS)		TS00014	REAR PLATE ASSY [for HAD-12 (W)]
PR401	2726223	BREAKER ICP-N15 (HCPS)		TS00015	REAR PLATE ASSY [for HAD-12 (WUN)]
P101	2693682	4P TERMINAL [except E,EBS,EZ]		TS00016	REAR PLATE ASSY [for HAD-12 (WAU)]
U951	2574831	IC GU1U571X		3473621	REAR PLATE ASSY [for HAD-15 (UC)]
W001	2975982	13P FLAT CABLE		TS00021	REAR PLATE ASSY [for HAD-15 (E)]
W501	2975987	12P FFC CABLE (HCPS) [for HAD-15]		TS00022	REAR PLATE ASSY [for HAD-15 (EBS)]
W501	2975984	12P FFC CABLE (HCPS) [for HAD-12]		TS00023	REAR PLATE ASSY [for HAD-15 (EZ)]
X201	2136661	CERAMIC OSCILLATOR		TS00024	REAR PLATE ASSY [for HAD-15 (W)]
X301	27803822	CRYSTAL OSCILLATOR		TS00025	REAR PLATE ASSY [for HAD-15 (WUN)]
X401	2792071	CERAMIC OSCILLATOR		TS00026	REAR PLATE ASSY [for HAD-15 (WAU)]
P101	2695001	2P TERMINAL [FOR E,EBS,EZ]	35	3872271	AC CORD BUSHING
P102	2693691	DIN ANTENNA TERMINAL [for E,EBS,EZ]	36	8671406	DT BIND HEAD SCREW,(3X6)
			37	8679406	DT BIND SCREW 3X6
		CABINET	38	8671608	DT SCREW,(4X8)
			39	8671414	3X14 DT BIND SCREW
1	4895091	FRONT PANEL SASS (HCPS) [for HAD-12]	40	8699410	BT BIND HEAD SCREW,(3X10)
	4895081	FRONT PANEL SASS (HCPS) [for HAD-15]	41	8815116	WASHER
2	8411641	FELT (HCPS)	⚠42	2618053	AC VOLTAGE [for W,W(UN), W(AU)]
3	3181361	FILTER (HCPS)	⚠43	2713144	POWER CORD (HCPS) [for UC]
4	3273641	FUNCTION BUTTON (HCPS)	⚠	2972566	AC POWER CORD (HCPS) [for E,EZ]
5	3273651	KNOB (BASS) (HCPS)	⚠	4899443	AC POWER CORD (HCPS) [for EBS]
6	3273661	KNOB (WIDE) (HCPS)	⚠	2706584	AC POWER CORD (HCPS) [for W,WUN]
7	3273671	MAIN VOLUME KNOB (HCPS)	⚠	2971113	AC POWER CORD (HCPS) [for WAU]

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SYMBOL NO.	PART NO.	DESCRIPTION
⚠44	2216261	POWER TRANSFORMER (HCPS) [FOR HAD-12 (UC)]
⚠	2216262	POWER TRANSFORMER (HCPS) [FOR HAD-12 (E,EZ)]
⚠	2216264	POWER TRANSFORMER (HCPS) [FOR HAD-12 (W,WUN,WAU)]
⚠	2216263	POWER TRANSFORMER (HCPS) [FOR HAD-12 (EBS)]
⚠	2216251	POWER TRANSFORMER (HCPS) [FOR HAD-15 (UC)]
⚠	2216252	POWER TRANSFORMER (HCPS) [FOR HAD-15 (E,EZ)]
⚠	2216253	POWER TRANSFORMER (HCPS) [FOR HAD-15 (EBS)]
⚠	2216254	POWER TRANSFORMER (HCPS) [for HAD-15 (W,WUN,WAU)]
⚠45	26679222	SIEMENS PLUG [for W,WAU]
⚠46	3874101	FL HOLDER (HCPS) [for HAD-15]
⚠47	2727893	FUSE (2A)
48	8671416	3X16 DT BIND SCREW
49	8691410	BT SCREW,(3X10)
50	8671408	DT BIND HEAD SCREW (3X8)
		CASSETE SHASSIS TN-1800-268P
1	3375351	CHASSIS ASSY
2	3375352	TAPE GUIDE
3	8511811	CLUMP SPRING (V)
4	3374401	PANEL COLLAR (A)
5	8511641	CHP LEVER COLLAR (A)
6	3375353	HEAD BASE ASSY
7	3374431	RELAY BOARD
8	8511671	HEAD COLLAR SCREWS
9	8511681	SPACER
10	8511691	WIRE CLAMP
11	8511711	HEAD PANEL (B) ASS
12	8511721	RC SPRING
13	8511731	PANEL SPRING
14	8511741	CHP LEVER
15	8511751	PINCH ROLLER SPRING
16	2734311	HEAD P
17	48190732	TAM SCREW (2X5)
18	8511771	M1.7X3 SCREW (FOR CAMERA)
19	3374402	PANEL SPRING PLATE
20	8511801	M2X5 CUP S TAPPING SCREW (FOR CAMERA)
21	8511841	M2X5 BIND SCREW
22	8511821	RF BELT (POLYURETHANE) SQUARE FAI 45.0 (1.1X1.1)
23	3375354	RF CLUTCH ASSY
24	3375355	GUIDE SCREW
25	8511851	T REEL ASS (F)
26	8511861	T REEL ASS (R)
27	8511881	FF GEAR
28	3375357	GUIDE SPRING
29	8511891	FR TRIGGER ARM SPRING
30	8511901	B.T SPRING (R)
31	4842444	WASHER (1.2)
32	4842443	WASHER (2.1)
33	8511921	HL WASHER 1.4×3.2×0.4
34	8511931	RF TRIGGER ARM
35	3375358	MOTOR ASSY(DECK MECHA) 1.2W
36	4842404	MOTOR RUBBER
37	8511951	MOTOR COLLAR SCREW
38	3375361	MAIN BELT (NEOPRENE) SQUARE FAI 62.5 (1.3X1.3)
39	8512001	M TRIGGER ARM SPRING
40	8512011	M GEAR
41	8512021	RF CAM GEAR
42	8512031	M TRIGGER ARM
43	8512041	PLUNGER
44	8512051	PLUNGER HOLDER
45	3375365	CH SLIDE LEVER ASSY
46	8512101	SOLENOIDE
47	48191962	E RING φ2.0
48	8512121	HL WASHER 1.55×3.5×0.5
49	8511911	WASHER 2.1×5×0.4
50	3375366	E STOPPER A
51	3375367	E STOPPER B
52	48196082	SCREW, PAN HEAD 2X5
53	3375369	E STOPPER SPRING M
54	8512401	E STOPPER COLLAR
55	8512151	T GEAR ARM (F) ASS
56	3375371	T GEAR (A)
57	4842444	WASHER (1.2)
58	8512181	T GEAR ARM (R) ASS
59	8512201	PINCH ROLLER ARM (F) ASS
60	8512211	P ARM (F) SPRING
61	8512221	PINCH ROLLER ARM (R) ASS
62	8512231	P ARM (R) SPRING
63	8512241	FLYWHEEL (F) ASS
64	8512251	FL METAL ASS
65	3374414	HL WASHER 2.3X3.8X.3
66	8512271	FLYWHEEL (R) ASS
67	3374416	FL METAL ASSY (R)
68	3374417	HL WASHER 1.55×3.5×0.5
69	3375382	PC BOARD ASSY
70	8512321	LEAF SWITCH MTS-10250MVJ
71	3375376	LEAF SWITCH MSW-1699CF
72	3375377	LEAF SWITCH MSW-17944HVDO
73	3374434	IC LB9050TN
74	3375379	EJECT LEVER
75	3375381	EJECT LEVER SPRING
76	8512141	M2X5 S TAPPING TAMS SCREW
		CASSETE SHASSIS TN-1800-267
1	3375351	CHASSIS ASSY

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SYMBOL NO.	PART NO.	DESCRIPTION
2	3375352	TAPE GUIDE
3	8511811	CLUMP SPRING (V)
4	3374401	PANEL COLLAR (A)
5	8511641	CHP LEVER COLLAR
6	3375353	HEAD BASE ASSY
7	8511661	RELAY BOARD
8	8511671	HEAD COLLAR SCREW
9	8511681	SPACER
10	8511691	WIRE CLAMP
11	8511711	HEAD PANEL (B) ASS
12	8511721	RC SPRING
13	8511731	PANEL SPRING
14	8511741	CHP LEVER
15	8511751	PINCH ROLLER SPRING
16	2734301	HEAD R/P
17	48190732	TAM SCREW (2X5)
18	8511771	M1.7X3 SCREW (FOR CAMERA)
19	3374402	PANEL SPRING PLATE
20	8511801	M2X5 CUP S TAPPING SCREW (FOR CAMERA)
21	8511841	M2X5 BIND SCREW
22	8511821	RF BELT (POLYURETHANE) SQUARE FAI 45.0 (1.1X1.1)
23	3375354	RF CLUTCH ASSY
24	3375355	GUIDE SCREW
25	8511851	T REEL ASS (F)
26	8511861	T REEL ASS (R)
27	8511881	FF GEAR
28	3375357	GUIDE SPRING
29	8511891	FR TRIGGER ARM SPRING
30	8511901	B.T SPRING (R)
31	4842444	WASHER (1.2)
32	4842443	WASHER (2.1)
33	8511921	HL WASHER 1.4×3.2×0.4
34	8511931	RF TRIGGER ARM
35	3375358	MOTOR ASSY(DECK MECHA) 1.2W
36	4842404	MOTOR RUBBER
37	8511951	MOTOR COLLAR SCREW
38	3375361	MAIN BELT (NEOPRENE) 62.5 (1.3X1.3)
39	8512001	M TRIGGER ARM SPRING
40	8512011	M GEAR
41	8512021	RF CAM GEAR
42	8512031	M TRIGGER ARM
43	8512041	PLUNGER
44	8512051	PLUNGER HOLDER
45	3375365	CH SLIDE LEVER ASSY
46	8512101	SOLENOIDE
47	48191962	E RING φ2.0
48	8512121	HL WASHER 1.55×3.5×0.5
49	8511911	WASHER 2.1×5×0.4
50	3375366	E STOPPER A
51	3375367	E STOPPER B
52	48196082	SCREW, PAN HEAD 2X5
53	3375369	E STOPPER SPRING M
54	8512401	E STOPPER COLLAR
55	8512151	T GEAR ARM (F) ASS
56	3375371	T GEAR (A)
57	4842444	WASHER 1.2×3×0.25
58	8512181	T GEAR ARM (R) ASS
59	8512201	PINCH ROLLER ARM (F) ASS
60	8512211	P ARM (F) SPRING
61	8512221	PINCH ROLLER ARM (R) ASS
62	8512231	P ARM (R) SPRING
63	8512241	FLYWHEEL (F) ASS
64	8512251	FL METAL ASSY (R)
65	3374414	HL WASHER 2.3X3.8X.3
66	8512271	FLYWHEEL (R) ASS
67	3374416	FL METAL ASSY (R)
68	3374417	HL WASHER 2.1X3.5X.3
69	3375374	PC BOARD ASSY
70	8512321	LEAF SWITCH MTS-10250MVJ
71	3375376	LEAF SWITCH MSW-1699CF
72	3375377	LEAF SWITCH MSW-17944HVDO
73	3374434	IC LB9050TN
74	3375379	EJECT LEVER
75	3375381	EJECT LEVER SPRING
76	8512141	M2X5 S TAPPING TAMS SCREW
		HTC-15
CN601	2713118	7P PH CONNECTOR (HCPS) [for UC]
CN602	2999524	8P PH CONNECTOR (HCPS) [for UC]
CN603	2999534	6P PH CONNECTOR (HCPS) [for UC]
CN604	2975372	5P PH CONNECTOR (HCPS) [for UC]
CN751	2975988	30P FLAT CABLE (HCPS)
C601	0890043	CD 0.01MF 16V +-20%
C602	0800048	EL 100MF 10V
C603	0890023	CD 120PF +-10% 50V
C604	0800048	EL 100MF 10V
C605	0800016	EL 10MF 25V
C606	0240058	CD 5600PF 16V +-20%
C607	0240218	CD 0.033MF 25V +-10%
C608	0240214	CD 0.015MF 25V +-10%
C609	0240214	CD 0.015MF 25V +-10%
C610	0240221	CD 0.056MF 25V +-10%
C611	0800048	EL 100MF 10V
C612	0800039	EL 47MF 10V
C613	0890043	CD 0.01MF 16V +-20%
C614	0800048	EL 100MF 10V
C615	0800001	EL 0.47MF 50V
C616	0890033	CD 680PF +-10% 50V
C617	02750352	MF 0.056MF 50V +-10%
C618	02750332	MF 0.027MF 50V +-10%
C619	0880017	PF 0.15MF +-10% 50V
C620	0890029	CD 390PF +-10% 50V
C621	02528022	EL 0.22MF 50V +-20%
C622	0800024	EL 22MF 25V
C623	0240058	CD 5600PF 16V +-20%
C624	02528072	EL 0.68MF 50V +-20%
C625	02528072	EL 0.68MF 50V +-20%

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SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
C626	0800016	EL 10MF 25V	C664	0800016	EL 10MF 25V
C627	0800016	EL 10MF 25V	C665	0800016	EL 10MF 25V
C628	0890043	CD 0.01MF 16V +-20%	C666	0800016	EL 10MF 25V
C629	0890034	CD 820PF +-10% 50V	C667	0880016	PF 0.1MF +-10% 50V
C630	0800001	EL 0.47MF 50V	C668	0880016	PF 0.1MF +-10% 50V
C631	0890043	CD 0.01MF 16V +-20%	C675	0890043	CD 0.01MF 16V +-20%
C632	0800003	EL 1MF 50V	C681	0890102	CD 22000PF 50V +80% -20%
C633	0800066	EL 330MF 16V	C682	0890102	CD 22000PF 50V +80% -20%
C634	0890036	CD 1500PF +-20% 16V	C683	0890043	CD 0.01MF 16V +-20%
C636	0800048	EL 100MF 10V	C684	0890043	CD 0.01MF 16V +-20%
C637	0890101	CD 0.01MF 16V +-20%	C685	0890043	CD 0.01MF 16V +-20%
C638	0890005	CD 4.7PF +-10% 50V	C686	0890043	CD 0.01MF 16V +-20%
C639	0890005	4.7PF +-10% 50V	C687	0890043	CD 0.01MF 16V +-20%
C640	0800048	EL 100MF 10V	C688	0890043	CD 0.01MF 16V +-20%
C641	0800048	EL 100MF 10V	C689	0890043	CD 0.01MF 16V +-20%
C642	0800048	EL 100MF 10V	C690	0800048	EL 100MF 10V
C643	02528022	EL 0.22MF 50V +-20%	C691	0890043	CD 0.01MF 16V +-20%
C644	0890044	CD 0.022MF +80-20% 25V	C692	0800048	EL 100MF 10V
C645	0890044	CD 0.022MF +80-20% 25V	C693	0890043	CD 0.01MF 16V +-20%
C646L	0890025	CD 180PF +-10% 50V	C694	0890035	CD 1000PF +-10% 50V
C646R	0890025	CD 180PF +-10% 50V	C695	0890035	CD 1000PF +-10% 50V
C647L	0890025	CD 180PF +-10% 50V	C696	0890048	CD 0.01MF 16V +-30%
C647R	0890025	CD 180PF +-10% 50V	C697	0800003	EL 1MF 50V
C648L	0890018	CD 56PF +-10% 50V	C698	0800058	EL 220MF 16V
C648R	0890018	CD 56PF +-10% 50V	C699	0890043	CD 0.01MF 16V +-20%
C649L	0890024	CD 150PF +-10% 50V	C753	0800048	EL 100MF 10V
C649R	0890024	CD 150PF +-10% 50V	C754	0890009	CD 12PF +-5% 50V
C650L	0890018	CD 56PF +-10% 50V	C755	0890013	CD 22PF +-20% 50V
C650R	0890018	CD 56PF +-10% 50V	C756	0800012	EL 4.7MF 50V
C651L	0800024	EL 22MF 25V	C757	0800007	EL 3.3MF 50V
C651R	0800024	EL 22MF 25V	C781	0890043	CD 0.01MF 16V +-20% [for W,WUN,WAU]
C652L	0890039	CD 4700PF +-20% 16V			
C652R	0890039	CD 4700PF +-20% 16V	C782	0800007	EL 3.3MF 50V [for W,WUN,WAU]
C653	0800042	EL 47MF 25V	C783	0890026	CD 220PF +-10% 50V [for W,WUN,WAU]
C654L	0880015	PF 0.068MF +-10% 50V			
C654R	0880015	PF 0.068MF +-10% 50V	C784	0800024	EL 22MF 25V [for W,WUN,WAU]
C655L	0890038	CD 3300PF +-20% 16V	C785	0800016	EL 10MF 25V [for W,WUN,WAU]
C655R	0890038	CD 3300PF +-20% 16V	C786	0800007	EL 3.3MF 50V [for W,WUN,WAU]
C656L	02750362	MF 0.082MF 50V +-10%	R601	01132212	CF 22 OHM 1/2W +-5%
C656R	02750362	MF 0.082MF 50V +-10%	R602	0700053	CF 8.2K OHM +-5% 1/16W
C657L	0880014	PF 0.047MF +-10% 50V	R603	0700044	CF 1.8K OHM +-5% 1/16W
C657R	0880014	PF 0.047MF +-10% 50V	R604	0700032	CF 220 OHM +-5% 1/16W
C658L	0890041	CD 6800PF +-30% 16V	R605	0700055	CF 12K OHM +-5% 1/16W
C658R	0890041	CD 6800PF +-30% 16V	R606	0700041	CF 1K OHM +-5% 1/16W
C659L	0800001	EL 0.47MF 50V	R607	0700032	CF 220 OHM +-5% 1/16W
C659R	0800001	EL 0.47MF 50V	R608	0700055	CF 12K OHM +-5% 1/16W
C660L	0800016	EL 10MF 25V	R609	0160322	SEMI VARIABLE RESISTOR 10K OHM
C660R	0800016	EL 10MF 25V	R610	0700066	CF 82K OHM +-5% 1/16W
C661L	02528012	EL 0.1MF 50V +-20%	R611	0700055	CF 12K OHM +-5% 1/16W
C661R	02528012	EL 0.1MF 50V +-20%	R612	0700056	CF 15K OHM +-5% 1/16W
C662	0800016	EL 10MF 25V	R613	0700023	CF 47 OHM +-5% 1/16W
C663L	0800001	EL 0.47MF 50V [except W,WUN,WAU]	R614	0700039	CF 820 OHM +-5% 1/16W
C663L	0800024	EL 22MF 25V [for W,WUN,WAU]	R615	0700047	CF 3.3K OHM +-5% 1/16W
C663R	0800001	EL 0.47MF 50V [except W,WUN,WAU]	R616	0160326	SEMI VR 3K OHM (HCPS)
C663R	0800024	EL 22MF 25V [for W,WUN,WAU]	R617	0700076	CF 470K OHM +-5% 1/16W

AX12
AXC12
AX15
AXC15

PRODUCT SAFETY NOTE: Components marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully, the Service Manual.

SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
R618	0700076	CF 470K OHM +-5% 1/16W	R672L	0700058	CF 22K OHM +-5% 1/16W
R619	0700049	CF 4.7K OHM +-5% 1/16W	R672R	0700058	CF 22K OHM +-5% 1/16W
R620	0700046	CF 2.7K OHM +-5% 1/16W	R673L	0700055	CF 12K OHM +-5% 1/16W
R621	0700037	CF 560 OHM +-5% 1/16W	R673R	0700055	CF 12K OHM +-5% 1/16W
R622	0700054	CF 10K OHM +-5% 1/16W	R674L	0700055	CF 12K OHM +-5% 1/16W
R623	0700054	CF 10K OHM +-5% 1/16W	R674R	0700055	CF 12K OHM +-5% 1/16W
R624	0700067	CF 100K OHM +-5% 1/16W	R675L	0700063	CF 47K OHM +-5% 1/16W
R625	0700061	CF 33K OHM +-5% 1/16W	R675R	0700063	CF 47K OHM +-5% 1/16W
R626	0700058	CF 22K OHM +-5% 1/16W	R676L	0700063	CF 47K OHM +-5% 1/16W
R627	0700058	CF 22K OHM +-5% 1/16W	R676R	0700063	CF 47K OHM +-5% 1/16W
R628	0700061	CF 33K OHM +-5% 1/16W	R677L	0700067	CF 100K OHM +-5% 1/16W
R629	0700058	CF 22K OHM +-5% 1/16W	R677R	0700067	CF 100K OHM +-5% 1/16W
R630	0700061	CF 33K OHM +-5% 1/16W	R678L	0700067	CF 100K OHM +-5% 1/16W
R631	0700061	CF 33K OHM +-5% 1/16W	R678R	0700067	CF 100K OHM +-5% 1/16W
R632	0700058	CF 22K OHM +-5% 1/16W	R679L	0700036	CF 470 OHM +-5% 1/16W
R633	0700058	CF 22K OHM +-5% 1/16W	R679R	0700036	CF 470 OHM +-5% 1/16W
R634	0700061	CF 33K OHM +-5% 1/16W	R680L	0700064	CF 56K OHM +-5% 1/16W
R635	0700061	CF 33K OHM +-5% 1/16W	R680R	0700064	CF 56K OHM +-5% 1/16W
R636	0700061	CF 33K OHM +-5% 1/16W	R681L	0700041	CF 1K OHM +-5% 1/16W
R637	0700061	CF 33K OHM +-5% 1/16W	R681R	0700041	CF 1K OHM +-5% 1/16W
R638	0700061	CF 33K OHM +-5% 1/16W	R682	0700056	CF 15K OHM +-5% 1/16W
R639	0700058	CF 22K OHM +-5% 1/16W	R683	0700052	CF 6.8K OHM +-5% 1/16W
R640	0700058	CF 22K OHM +-5% 1/16W	R689	0700055	CF 12K OHM +-5% 1/16W
R641	0700041	CF 1K OHM +-5% 1/16W	R690	0700055	CF 12K OHM +-5% 1/16W
R642	0700058	CF 22K OHM +-5% 1/16W	R691	0700055	CF 12K OHM +-5% 1/16W
R643	0700058	CF 22K OHM +-5% 1/16W	R692	0700055	CF 12K OHM +-5% 1/16W
R644	0700081	CF 1.0M OHM +-5% 1/16W	R693	0700055	CF 12K OHM +-5% 1/16W
R645	0700018	CF 22 OHM +-5% 1/16W	R694	0700055	CF 12K OHM +-5% 1/16W
R646	0700018	CF 22 OHM +-5% 1/16W	R695	0700055	CFM 12K OHM +-5% 1/16W
R647	0700018	CF 22 OHM +-5% 1/16W	R696	0700058	CF 22K OHM +-5% 1/16W
R648	0700058	CF 22K OHM +-5% 1/16W	R697L	0700064	CF 56K OHM +-5% 1/16W
R649	0700054	CF 10K OHM +-5% 1/16W	R697R	0700064	CF 56K OHM +-5% 1/16W
R650	0700038	CF 680 OHM +-5% 1/16W	R698L	0700054	CF 10K OHM +-5% 1/16W
R651	0700041	CF 1K OHM +-5% 1/16W	R698R	0700054	CF 10K OHM +-5% 1/16W
R652	0700041	CF 1K OHM +-5% 1/16W	R699L	0700058	CF 22K OHM +-5% 1/16W
R653	0700041	CF 1K OHM +-5% 1/16W	R699R	0700058	CF 22K OHM +-5% 1/16W
R654	0700041	CF 1K OHM +-5% 1/16W	R700L	0700058	CF 22K OHM +-5% 1/16W
R655	0700058	CF 22K OHM +-5% 1/16W	R700R	0700058	CF 22K OHM +-5% 1/16W
R656	0700058	CF 22K OHM +-5% 1/16W	R701L	0700054	CF 10K OHM +-5% 1/16W
R657	0700063	CF 47K OHM +-5% 1/16W	R701R	0700054	CF 10K OHM +-5% 1/16W
R658	0700056	CF 15K OHM +-5% 1/16W	R702L	0700053	CF 8.2K OHM +-5% 1/16W
R659	0700056	CF 15K OHM +-5% 1/16W	R702R	0700053	CF 8.2K OHM +-5% 1/16W
R660	0700063	CF 47K OHM +-5% 1/16W	R703L	0700052	CF 6.8K OHM +-5% 1/16W
R661	0700056	CF 15K OHM +-5% 1/16W	R703R	0700052	CF 6.8K OHM +-5% 1/16W
R662	0700057	CF 18K OHM +-5% 1/16W	R704L	0700051	CF 5.6K OHM +-5% 1/16W
R663	0700066	CF 82K OHM +-5% 1/16W	R704R	0700051	CF 5.6K OHM +-5% 1/16W
R664	0700068	CF 120K OHM +-5% 1/16W	R705L	0700052	CF 6.8K OHM +-5% 1/16W
R665	0700054	CF 10K OHM +-5% 1/16W	R705R	0700052	CF 6.8K OHM +-5% 1/16W
R666	0700054	CF 10K OHM +-5% 1/16W	R706L	0700054	CF 10K OHM +-5% 1/16W
R667	0700045	CF 2.2K OHM +-5% 1/16W	R706R	0700054	CF 10K OHM +-5% 1/16W
R668	0700045	CF 2.2K OHM +-5% 1/16W	R707L	0700059	CF 27K OHM +-5% 1/16W
R669	0700063	CF 47K OHM +-5% 1/16W	R707R	0700059	CF 27K OHM +-5% 1/16W
R670	0700063	CF 47K OHM +-5% 1/16W	R708L	0700032	CF 220 OHM +-5% 1/16W
R671L	0700058	CF 22K OHM +-5% 1/16W	R708R	0700032	CF 220 OHM +-5% 1/16W
R671R	0700058	CF 22K OHM +-5% 1/16W	R709_	0700064	CF 56K OHM +-5% 1/16W

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SYMBOL NO.	PART NO.	DESCRIPTION
R709R	0700064	CF 56K OHM +-5% 1/16W
R710L	0700041	CF 1K OHM +-5% 1/16W
R710R	0700041	CF 1K OHM +-5% 1/16W
R711L	0700063	CF 47K OHM +-5% 1/16W
R711R	0700063	CF 47K OHM +-5% 1/16W
R712	0700063	CF 47K OHM +-5% 1/16W
R713	0700063	CF 47K OHM +-5% 1/16W
R714	0700045	CF 2.2K OHM +-5% 1/16W
R715	0700058	CF 22K OHM +-5% 1/16W
R716L	0700041	CF 1K OHM +-5% 1/16W [for W,WUN,WAU]
R716R	0700041	CF 1K OHM +-5% 1/16W [for W,WUN,WAU]
R751	0700063	CF 47K OHM +-5% 1/16W
R752	0700045	CF 2.2K OHM +-5% 1/16W
R753	0700045	CF 2.2K OHM +-5% 1/16W
R754	0700045	CF 2.2K OHM +-5% 1/16W
R755	0700045	CF 2.2K OHM +-5% 1/16W
R756	0700041	CF 1K OHM +-5% 1/16W
R757	0700041	CF 1K OHM +-5% 1/16W
R758	0700063	CF 47K OHM +-5% 1/16W
R759	0700063	CF 47K OHM +-5% 1/16W
R760	0700063	CF 47K OHM +-5% 1/16W
R761	0700063	CF 47K OHM +-5% 1/16W
R762	0700063	CF 47K OHM +-5% 1/16W
R763	0700063	CF 47K OHM +-5% 1/16W
R764	0700074	CF 330K OHM +-5% 1/16W
R765	0700063	CF 47K OHM +-5% 1/16W
R766	0700063	CF 47K OHM +-5% 1/16W
R767	0700063	CF 47K OHM +-5% 1/16W
R768	0700041	CF 1K OHM +-5% 1/16W
R769	0700065	CF 68K OHM +-5% 1/16W
R771	0700032	CF 220 OHM +-5% 1/16W
R772	0700041	CF 1K OHM +-5% 1/16W
R773	0700041	CF 1K OHM +-5% 1/16W
R774	0700051	CF 5.6K OHM +-5% 1/16W
R775	0700051	CF 5.6K OHM +-5% 1/16W
R781	0700041	CF 1K OHM +-5% 1/16W [for W,WUN,WAU]
R782	0700063	CF 47K OHM +-5% 1/16W [for W,WUN,WAU]
R783	0700036	CF 470 OHM +-5% 1/16W [for W,WUN,WAU]
R784	0700063	CF 47K OHM +-5% 1/16W [for W,WUN,WAU]
R785	0700063	CF 47K OHM +-5% 1/16W [for W,WUN,WAU]
R786	0700063	CF 47K OHM +-5% 1/16W [for W,WUN,WAU]
R787	0700023	CF 47 OHM +-5% 1/16W [for W,WUN,WAU]
R788	0157881	ROTARY VOLUME 10K OHM [for W,WUN,WAU]
IC601	2003371	IC HA12158NT
IC602	2019822	IC HD49233AFS
IC603	2381892	IC UPC358C(MS)
IC604	2321322	IC NJM2100D
IC605	2003701	IC BA6294 (LINEAR)
IC606	2003701	IC BA6294 (LINEAR)
IC607	2916281	IC BA6219
IC608	2008711	IC BU2040
IC609	2387304	IC M5218AP
IC610	2003251	IC AN7805 (LINAR)
IC751	2001891	IC UPD75216ACW-W60
IC752	2005421	IC S8054ALR (CMOS)
IC781	2387304	IC M5218AP [for W,WUN,WAU]
Q601	2319152	TR HIT5610C SILICON 350MHZ 1W
Q603L	2315422	TR 2SD1468STD (R)
Q603R	2315422	TR 2SD1468STD (R)
Q604	2321322	TR 2SA844E SI 200MHZ 300MW
Q605	2326871	TR DTC124ES
Q606	23282822	TR SILICON 2SC458C 230MHZ 200MW
Q607L	23282822	TR SILICON 2SC458C 230MHZ 200MW
Q607R	23282822	TR SILICON 2SC458C 230MHZ 200MW
Q608L	23282822	TR SILICON 2SC458C 230MHZ 200MW
Q608R	23282822	TR SILICON 2SC458C 230MHZ 200MW
Q609L	2326871	TR DTC124ES
Q609R	2326871	TR DTC124ES
Q610L	2326871	TR DTC124ES
Q610R	2326871	TR DTC124ES
Q611L	2326871	TR DTC124ES
Q611R	2326871	TR DTC124ES
Q612L	2326871	TR DTC124ES
Q612R	2326871	TR DTC124ES
Q613L	2326871	TR DTC124ES
Q613R	2326871	TR DTC124ES
Q614L	2315422	TR 2SD1468STD (R)
Q614R	2315422	TR 2SD1468STD (R)
Q615	2326871	TR DTC124ES
Q616	2321322	TR 2SA844E SI 200MHZ 300MW
Q617	2324362	TR 2SA1129(K)
D602	2398921	DI 1N4531T
D603	2398921	DI 1N4531T
D604	2398921	DI 1N4531T
D605	2398921	DI 1N4531T
D606	2398921	DI 1N4531T
D607	2398921	DI 1N4531T
D608	2398921	DI 1N4531T
D609	2398921	DI 1N4531T
D751	2398921	DI 1N4531T
D752	2398921	DI 1N4531T
D753	2398921	DI 1N4531T
D754	2398921	DI 1N4531T
D755	2398921	DI 1N4531T
D756	2398921	DI 1N4531T
D757	2398921	DI 1N4531T
D758	2398921	DI 1N4531T
D759	2398921	DI 1N4531T [for UC]
D760	2398921	DI 1N4531T
D761	2398921	DI 1N4531T

AX12
AXC12
AX15
AXC15

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SYMBOL NO.	PART NO.	DESCRIPTION
ZD601	2331795	ZD HZ-5 (B2)
ZD602	2331785	DI-ZENER HZ4(B2)
ZD751	23375272	DI HZ9C1 1MHZ 400MW
FL751	2482251	FLUORESCENCE DISPLAY TUBE (HCPS)
LED601	2397314	LED RLL20503PD-R15(S)
L601	2122239	LA AXIAL COIL 10 MICRO H
S751	2634341	TACT SWITCH
S752	2634341	TACT SWITCH
S753	2634341	TACT SWITCH
S754	2634341	TACT SWITCH
S755	2634341	TACT SWITCH
S756	2634341	TACT SWITCH
S757	2634341	TACT SWITCH
S758	2634341	TACT SWITCH
S759	2634341	TACT SWITCH
S760	2634341	TACT SWITCH
S761	2634341	TACT SWITCH
S762	2634341	TACT SWITCH
S763	2634341	TACT SWITCH
S764	2634341	TACT SWITCH
S765	2634341	TACT SWITCH
P601	2998985	13P FG CONNECTOR (HCPS)
P602	2998984	7P FG CONNECTOR (HCPS)
X601	2168881	CERAMIC OSCILLATOR 33.868MHZ (HCPS)
X751	2168481	CERAMIC OSCILLATOR
X752	2168491	CRYSTAL OSCILLATOR 32.768KHZ
J601	2695011	MIC JACK (HCPS) [for W,WUN,WAU]

CABINET

1	4899651	FRONT PANEL SASS (HCPS) [except W,W(UN),W(AU)]
	4899652	FRONT PANEL SASS (HCPS) [for W,W(UN),W(AU)]
2	8411641	FELT (HCPS)
3	3204781	CD TRAY PANEL (HCPS)
4	3273741	POWER BUTTON (HCPS)
5	3273752	BUTTON (HCPS)
6	3273761	BUTTON (HCPS)
7	3273771	MIC KNOB (HCPS) [for W,W(UN),W(AU)]
8	3471651	TOP COVER (HCPS)
9	3471671	REAR PLATE (HCPS) [for UC]
	TS00017	REAR PLATE (HCPS) [for E,EBS,EZ]
	TS00018	REAR PLATE (HCPS) [for W,WUN,WAU]
10	3831361	FOOT (HCPS)
11	8411652	FOOT RUBBER (HCPS)
12	8671406	DT BIND HEAD SCREW,(3X6)
13	8679406	DT BIND SCREW 3X6
14	8671408	DT BIND HEAD SCREW (3X8)
15	8691410	BT SCREW,(3X10)
16	8691410	BT SCREW,(3X10) [for W,W(UN),W(AU)]
17	8699410	BT BIND HEAD SCREW,(3X10)
18	8671408	DT BIND HEAD SCREW (3X8)

SYMBOL NO.	PART NO.	DESCRIPTION
19	3874121	FL HOLDER (HCPS)

CD SINGLE MACHA

1	3372572	GEAR (POWER) (HCPS)
2	3372573	GUIDE BAR A (HCPS)
3	3372574	GUIDE BAR B (HCPS)
4	3372575	2.6X6 TIGHT SCREW (HCPS)
5	3372576	SWITCH (HCPS)
6	3372577	PH CONNECTOR (HCPS)
7	3372578	PC BOARD (FOR DISK MOTOR) (HCPS)
8	3372579	RACK (HCPS)
9	3372581	BIND TIGHT SCREW 2X6 (HCPS)
10	3381291	PICK UP ASSY (HOP-M3A)
11	3372582	2X2.5 SCREW (HCPS)
12	3372583	MECHA PLATE (HCPS)
13	3372584	MECHA FRAME (HCPS)
14	3372585	CD TRAY (HCPS)
15	3372586	CLAMPER FRAME (HCPS)
16	3372587	UD PLATE GEAR (HCPS)
17	3372588	CLAMPER F (HCPS)
18	3372589	RELAY GEAR A (HCPS)
19	3372591	RELAY GEAR B (HCPS)
20	3372592	RELAY GEAR C (HCPS)
21	3372593	GEAR BELT (CHLOROPRENE) SQUARE FAI27.1 (1.7X1.7) (HCPS)
22	3372594	DAMPER (HCPS)
23	3372595	CLAMPER PLATE (HCPS)
24	3372596	SCREW F (HCPS)
25	3372597	PC BOARD (FOR LOADING MOTOR) (HCPS)
26	3372598	MAGNET (HCPS)
27	3372599	P TIGHT SCREW 3X8 (HCPS)
28	3372601	BIND TIGHT SCREW 3X8 (HCPS)
29	3372602	BIND SCREW 2.6X4 (HCPS)
30	3372603	PH CONNECTOR (HCPS)
31	3372604	CONNECTOR (HCPS)
32	3372605	SWITCH (HCPS)
33	3372606	SPRING A (HCPS)
34	3372607	SPRING B (HCPS)
35	3372608	SPRING C (HCPS)
36	3372624	TRAY STOPPER (HCPS)
37	3372611	DISK MOTOR ASSY (WITH TURN TABLE) (HCPS)
38	3372616	FEED MOTOR ASSY (HCPS)
39	3372621	LOADING MOTOR ASSY (HCPS)
40	3372571	GEAR (MIDDLE) (HCPS)

HTC-C15

CN603	2979211	7P FLAT CABLE (HCPS)
CN604	2979211	7P FLAT CABLE (HCPS)
CN605	2979212	6P FLAT CABLE (HCPS)
CN751	2975985	30P FLAT CABLE (HCPS)
C603	0890019	CD 68PF +-5% 50V

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SYMBOL NO.	PART NO.	DESCRIPTION
C604	0800048	EL 100MF 10V
C605	0800016	EL 10MF 25V
C606	0240056	CD 3900PF 16V +-20%
C607	0240218	CD 0.033MF 25V +-10%
C608	0240214	CD 0.015MF 25V +-10%
C609	0240214	CD 0.015MF 25V +-10%
C610	0880017	PF 0.15MF +-10% 50V
C611	0800048	EL 100MF 10V
C612	0800039	EL 47MF 10V
C613	0890043	CD 0.01MF 16V +-20%
C614	0800048	EL 100MF 10V
C615	0800001	EL 0.47MF 50V
C616	0890033	CD 680PF +-10% 50V
C617	02750352	MYLAR FILM 0.056MF 50V +-10%
C618	0880013	PF 0.033MF +-10% 50V
C619	0880017	PF 0.15MF +-10% 50V
C620	0890029	CD 390PF +-10% 50V
C621	02528012	EL 0.1MF 50V +-20%
C622	0800024	EL 22MF 25V
C623	0240058	CD 5600PF 16V +-20%
C624	02528072	EL 0.68MF 50V +-20%
C625	02528072	EL 0.68MF 50V +-20%
C626	0800024	EL 22MF 25V
C627	0800016	EL 10MF 25V
C628	0890043	CD 0.01MF 16V +-20%
C629	0890034	CD 820PF +-10% 50V
C630	0800001	EL 0.47MF 50V
C631	0890043	CD 0.01MF 16V +-20%
C632	0800003	EL 1MF 50V
C633	0800066	EL 330MF 16V
C634	0890036	CD 1500PF +-20% 16V
C635	0890043	CD 0.01MF 16V +-20%
C636	0890043	CD 0.01MF 16V +-20%
C637	0800048	EL 100MF 10V
C638	0890005	CD 4.7PF +-10% 50V
C639	0890005	CD 4.7PF +-10% 50V
C640	0800048	EL 100MF 10V
C641	0800048	EL 100MF 10V
C642	0800048	EL 100MF 10V
C643	02528022	EL 0.22MF 50V +-20%
C644	0890044	CD 0.022MF +80-20% 25V
C645	0890044	CD 0.022MF +80-20% 25V
C646L	0890025	CD 180PF +-10% 50V
C646R	0890025	CD 180PF +-10% 50V
C647L	0890025	CD 180PF +-10% 50V
C647R	0890025	CD 180PF +-10% 50V
C648L	0890018	CD 56PF +-10% 50V
C648R	0890018	CD 56PF +-10% 50V
C649L	0890024	CD 150PF +-10% 50V
C649R	0890024	CD 150PF +-10% 50V
C650L	0890018	CD 56PF +-10% 50V
C650R	0890018	CD 56PF +-10% 50V
C651L	0800024	EL 22MF 25V
C651R	0800024	EL 22MF 25V
C652L	0890039	CD 4700PF +-20% 16V
C652R	0890039	CD 4700PF +-20% 16V
C653	0800042	EL 47MF 25V
C654L	0880015	PF 0.068MF +-10% 50V
C654R	0880015	PF 0.068MF +-10% 50V
C655L	0890038	CD 3300PF +-20% 16V
C655R	0890038	CD 3300PF +-20% 16V
C656L	02750362	MF 0.082MF 50V +-10%
C656R	02750362	MF 0.082MF 50V +-10%
C657L	0880014	PF 0.047MF +-10% 50V
C657R	0880014	PF 0.047MF +-10% 50V
C658L	0890041	CD 6800PF +-30% 16V
C658R	0890041	CD 6800PF +-30% 16V
C659L	0800001	EL 0.47MF 50V
C659R	0800001	EL 0.47MF 50V
C660L	0800016	EL 10MF 25V
C660R	0800016	EL 10MF 25V
C661L	02528012	EL 0.1MF 50V +-20%
C661R	02528012	EL 0.1MF 50V +-20%
C662	0800016	EL 10MF 25V
C663L	0800001	EL 0.47MF 50V [except W,WUN,WAU]
C663L	0800024	EL 22MF 25V [for W,WUN,WAU]
C663R	0800001	EL 0.47MF 50V [except W,WUN,WAU]
C663R	0800024	EL 22MF 25V [for W,WUN,WAU]
C664	0800016	EL 10MF 25V
C665	0800016	EL 10MF 25V
C666	0800016	EL 10MF 25V
C667	0880016	PF 0.1MF +-10% 50V
C670	0890043	CD 0.01MF 16V +-20%
C671	0890043	CD 0.01MF 16V +-20%
C672	0800048	EL 100MF 10V
C673	0800048	EL 100MF 10V
C674	0890043	CD 0.01MF 16V +-20%
C675	0890043	CD 0.01MF 16V +-20%
C681	0890102	CD 22000PF 50V +80% -20%
C682	0890102	CD 22000PF 50V +80% -20%
C683	0890043	CD 0.01MF 16V +-20%
C685	0890043	CD 0.01MF 16V +-20%
C687	0890043	CD 0.01MF 16V +-20%
C688	0890043	CD 0.01MF 16V +-20%
C689	0890043	CD 0.01MF 16V +-20%
C690	0800048	EL 100MF 10V
C691	0890043	CD 0.01MF 16V +-20%
C692	0800048	EL 100MF 10V
C693	0890101	CD 0.01MF 16V +-20%
C694	0890035	CD 1000PF +-10% 50V
C695	0890035	CD 1000PF +-10% 50V
C696	0800048	EL 100MF 10V
C697	0800003	EL 1MF 50V
C698	0800058	EL 220MF 16V
C699	0890043	CD 0.01MF 16V +-20%
C753	0800048	EL 100MF 10V
C754	0890009	CD 12PF +-5% 50V
C755	0890013	CD 22PF +-20% 50V
C756	0800012	EL 4.7MF 50V

PRODUCT SAFETY NOTE: Components marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully, the Service Manual.

SYMBOL NO.	PART NO.	DESCRIPTION
C757	0800007	EL 3.3MF 50V
C781	0890043	CD 0.01MF 16V +-20% [for W,WUN,WAU]
C782	0800007	EL 3.3MF 50V [for W,WUN,WAU]
C783	0890026	CD 220PF +-10% 50V[for W,WUN,WAU]
C784	0800024	EL 22MF 25V [for W,WUN,WAU]
C785	0800016	EL 10MF 25V [for W,WUN,WAU]
C786	0800115	EL 3.3MF 50V [for W,WUN,WAU]
C787	0800145	EL 100MF 16V
R601	0700054	CF 10K OHM +-5% 1/16W
R602	0700056	CF 15K OHM +-5% 1/16W
R603	0700047	CF 3.3K OHM +-5% 1/16W
R604	0700039	CF 820 OHM +-5% 1/16W
R605	0700055	CF 12K OHM +-5% 1/16W
R606	0700041	CF 1K OHM +-5% 1/16W
R608	0700058	CF 22K OHM +-5% 1/16W
R609	0160322	VR 10K OHM
R610	0700066	CF 82K OHM +-5% 1/16W
R611	0700053	CF 8.2K OHM +-5% 1/16W
R612	0700061	CF 33K OHM +-5% 1/16W
R613	0700023	CF 47 OHM +-5% 1/16W
R614	0700039	CF 820 OHM +-5% 1/16W
R615	0700047	CF 3.3K OHM +-5% 1/16W
R616	0160326	VR 3K OHM (HCPS)
R617	0700076	CF 470K OHM +-5% 1/16W
R618	0700076	CF 470K OHM +-5% 1/16W
R619	0700049	CF 4.7K OHM +-5% 1/16W
R620	0700046	CF 2.7K OHM +-5% 1/16W
R621	0700037	CF 560 OHM +-5% 1/16W
R622	0700054	CF 10K OHM +-5% 1/16W
R623	0700054	CF 10K OHM +-5% 1/16W
R624	0700067	CF 100K OHM +-5% 1/16W
R625	0700061	CF 33K OHM +-5% 1/16W
R626	0700058	CF 22K OHM +-5% 1/16W
R627	0700058	CF 22K OHM +-5% 1/16W
R628	0700061	CF 33K OHM +-5% 1/16W
R629	0700058	CF 22K OHM +-5% 1/16W
R630	0700061	CF 33K OHM +-5% 1/16W
R631	0700061	CF 33K OHM +-5% 1/16W
R632	0700058	CF 22K OHM +-5% 1/16W
R633	0700058	CF 22K OHM +-5% 1/16W
R634	0700061	CF 33K OHM +-5% 1/16W
R635	0700061	CF 33K OHM +-5% 1/16W
R636	0700061	CF 33K OHM +-5% 1/16W
R637	0700067	CF 100K OHM +-5% 1/16W
R638	0700063	CF 47K OHM +-5% 1/16W
R639	0700058	CF 22K OHM +-5% 1/16W
R640	0700058	CF 22K OHM +-5% 1/16W
R641	0700041	CF 1K OHM +-5% 1/16W
R642	0700058	CF 22K OHM +-5% 1/16W
R643	0700058	CF 22K OHM +-5% 1/16W
R644	0700081	CF 1.0M OHM +-5% 1/16W
R645	0700018	CF 22 OHM +-5% 1/16W
R646	0700018	CF 22 OHM +-5% 1/16W
R647	0700018	CF 22 OHM +-5% 1/16W
R648	0700058	CF 22K OHM +-5% 1/16W
R649	0700054	CF 10K OHM +-5% 1/16W
R650	0700038	CF 680 OHM +-5% 1/16W
R651	0700041	CF 1K OHM +-5% 1/16W
R652	0700041	CF 1K OHM +-5% 1/16W
R653	0700041	CF 1K OHM +-5% 1/16W
R654	0700041	CF 1K OHM +-5% 1/16W
R655	0700058	CF 22K OHM +-5% 1/16W
R656	0700058	CF 22K OHM +-5% 1/16W
R657	0700063	CF 47K OHM +-5% 1/16W
R658	0700056	CF 15K OHM +-5% 1/16W
R659	0700056	CF 15K OHM +-5% 1/16W
R660	0700063	CF 47K OHM +-5% 1/16W
R661	0700056	CF 15K OHM +-5% 1/16W
R662	0700057	CF 18K OHM +-5% 1/16W
R663	0700066	CF 82K OHM +-5% 1/16W
R664	0700068	CF 120K OHM +-5% 1/16W
R665	0700054	CF 10K OHM +-5% 1/16W
R666	0700054	CF 10K OHM +-5% 1/16W
R667	0700045	CF 2.2K OHM +-5% 1/16W
R668	0700045	CF 2.2K OHM +-5% 1/16W
R669	0700063	CF 47K OHM +-5% 1/16W
R670	0700063	CF 47K OHM +-5% 1/16W
R671L	0700058	CF 22K OHM +-5% 1/16W
R671R	0700058	CF 22K OHM +-5% 1/16W
R672L	0700058	CF 22K OHM +-5% 1/16W
R672R	0700058	CF 22K OHM +-5% 1/16W
R673L	0700055	CF 12K OHM +-5% 1/16W
R673R	0700055	CF 12K OHM +-5% 1/16W
R674L	0700055	CF 12K OHM +-5% 1/16W
R674R	0700055	CF 12K OHM +-5% 1/16W
R675L	0700063	CF 47K OHM +-5% 1/16W
R675R	0700063	CF 47K OHM +-5% 1/16W
R676L	0700063	CF 47K OHM +-5% 1/16W
R676R	0700063	CF 47K OHM +-5% 1/16W
R677L	0700067	CF 100K OHM +-5% 1/16W
R677R	0700067	CF 100K OHM +-5% 1/16W
R678L	0700067	CF 100K OHM +-5% 1/16W
R678R	0700067	CF 100K OHM +-5% 1/16W
R679L	0700036	CF 470 OHM +-5% 1/16W
R679R	0700036	CF 470 OHM +-5% 1/16W
R680L	0700064	CF 56K OHM +-5% 1/16W
R680R	0700064	CF 56K OHM +-5% 1/16W
R681L	0700041	CF 1K OHM +-5% 1/16W
R681R	0700041	CF 1K OHM +-5% 1/16W
R682	0700056	CF 15K OHM +-5% 1/16W
R683	0700052	CF 6.8K OHM +-5% 1/16W
R684	0700058	CF 22K OHM +-5% 1/16W
R685	0700058	CF 22K OHM +-5% 1/16W
R686	0700058	CF 22K OHM +-5% 1/16W
R687	0700058	CF 22K OHM +-5% 1/16W
R689	0700055	CF 12K OHM +-5% 1/16W
R690	0700055	CF 12K OHM +-5% 1/16W
R691	0700055	CF 12K OHM +-5% 1/16W
R692	0700055	CF 12K OHM +-5% 1/16W

AX12
AXC12
AX15
AXC15

PRODUCT SAFETY NOTE: Components marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully, the Service Manual.

SYMBOL NO.	PART NO.	DESCRIPTION
R693	0700055	CF 12K OHM +-5% 1/16W
R694	0700055	CF 12K OHM +-5% 1/16W
R695	0700055	CF 12K OHM +-5% 1/16W
R696	0700058	CF 22K OHM +-5% 1/16W
R697L	0700064	CF 56K OHM +-5% 1/16W
R697R	0700064	CF 56K OHM +-5% 1/16W
R698L	0700054	CF 10K OHM +-5% 1/16W
R698R	0700054	CF 10K OHM +-5% 1/16W
R699L	0700058	CF 22K OHM +-5% 1/16W
R699R	0700058	CF 22K OHM +-5% 1/16W
R700L	0700058	CF 22K OHM +-5% 1/16W
R700R	0700058	CF 22K OHM +-5% 1/16W
R701L	0700054	CF 10K OHM +-5% 1/16W
R701R	0700054	CF 10K OHM +-5% 1/16W
R702L	0700053	CF 8.2K OHM +-5% 1/16W
R702R	0700053	CF 8.2K OHM +-5% 1/16W
R703L	0700052	CF 6.8K OHM +-5% 1/16W
R703R	0700052	CF 6.8K OHM +-5% 1/16W
R704L	0700051	CF 5.6K OHM +-5% 1/16W
R704R	0700051	CF 5.6K OHM +-5% 1/16W
R705L	0700052	CF 6.8K OHM +-5% 1/16W
R705R	0700052	CF 6.8K OHM +-5% 1/16W
R706L	0700054	CF 10K OHM +-5% 1/16W
R706R	0700054	CF 10K OHM +-5% 1/16W
R707L	0700059	CF 27K OHM +-5% 1/16W
R707R	0700059	CF 27K OHM +-5% 1/16W
R708L	0700032	CF 220 OHM +-5% 1/16W
R708R	0700032	CF 220 OHM +-5% 1/16W
R709L	0700064	CF 56K OHM +-5% 1/16W
R709R	0700064	CF 56K OHM +-5% 1/16W
R710L	0700041	CF 1K OHM +-5% 1/16W
R710R	0700041	CF 1K OHM +-5% 1/16W
R711L	0700063	CF 47K OHM +-5% 1/16W
R711R	0700063	CF 47K OHM +-5% 1/16W
R712	0700063	CF 47K OHM +-5% 1/16W
R713	0700063	CF 47K OHM +-5% 1/16W
R714	0700045	CF 2.2K OHM +-5% 1/16W
R715	0700058	CF 22K OHM +-5% 1/16W
R716L	0700041	CF 1K OHM +-5% 1/16W [for W,WUN,WAU]
R716R	0700041	CF 1K OHM +-5% 1/16W [for W,WUN,WAU]
R731	0700063	CF 47K OHM +-5% 1/16W
R732	0700063	CF 47K OHM +-5% 1/16W
R733	0700063	CF 47K OHM +-5% 1/16W
R734	0700063	CF 47K OHM +-5% 1/16W
R735	0700063	CF 47K OHM +-5% 1/16W
R736	0700063	CF 47K OHM +-5% 1/16W
R737	0700063	CF 47K OHM +-5% 1/16W
R738	0700063	CF 47K OHM +-5% 1/16W
R739	0700041	CF 1K OHM +-5% 1/16W
R740	0700041	CF 1K OHM +-5% 1/16W
R751	0700045	CF 2.2K OHM +-5% 1/16W
R752	0700045	CF 2.2K OHM +-5% 1/16W
R756	0700041	CF 1K OHM +-5% 1/16W
R757	0700041	CF 1K OHM +-5% 1/16W
R761	0700063	CF 47K OHM +-5% 1/16W
R762	0700063	CF 47K OHM +-5% 1/16W
R763	0700063	CF 47K OHM +-5% 1/16W
R764	0700074	CF 330K OHM +-5% 1/16W
R765	0700063	CF 47K OHM +-5% 1/16W
R766	0700063	CF 47K OHM +-5% 1/16W
R767	0700063	CF 47K OHM +-5% 1/16W
R768	0700041	CF 1K OHM +-5% 1/16W
R769	0700065	CF 68K OHM +-5% 1/16W
R771	0700032	CF 220 OHM +-5% 1/16W
R772	0700041	CF 1K OHM +-5% 1/16W
R773	0700041	CF 1K OHM +-5% 1/16W
R774	0700051	CF 5.6K OHM +-5% 1/16W
R775	0700051	CF 5.6K OHM +-5% 1/16W
R781	0700041	CF 1K OHM +-5% 1/16W [for W,WUN,WAU]
R782	0700063	CF 47K OHM +-5% 1/16W [for W,WUN,WAU]
R783	0700036	CF 470 OHM +-5% 1/16W [for W,WUN,WAU]
R784	0700063	CF 47K OHM +-5% 1/16W [for W,WUN,WAU]
R785	0700063	CF 47K OHM +-5% 1/16W [for W,WUN,WAU]
R786	0700063	CF 47K OHM +-5% 1/16W [for W,WUN,WAU]
R787	0700023	CF 47 OHM +-5% 1/16W [for W,WUN,WAU]
R788	0157881	ROTARY VOLUME 10K OHM [for W,WUN,WAU]
IC601	2003371	IC HA12158NT
IC602	2019822	IC HD49233AFS
IC603	2381892	IC UPC358C(MS)
IC604	2020251	IC NJM2100D
IC605	2003701	IC BA6294 (LINEAR)
IC606	2003701	IC BA6294 (LINEAR)
IC607	2916281	IC BA6219
IC608	2008711	IC BU2040
IC609	2387304	IC M5218AP
IC610	2366361	IC AN7805
IC611	2916281	IC BA6219
IC612	2361452	IC HD14051BP
IC751	2001892	IC UPD75216ACW-W68
IC752	2005421	IC S8054ALR (CMOS)
IC781	2387304	IC M5218AP [for W,WUN,WAU]
Q601	2326871	TR DTC124ES
Q602	2326871	TR DTC124ES
Q603L	2315422	TR 2SD1468STD (R)
Q603R	2315422	TR 2SD1468STD (R)
Q604	23280832	TR 2SA844E SI 200MHZ 300MW
Q605	2326871	TR DTC124EST
Q606	23282822	TR SILICON 2SC458C
Q607L	23282822	TR SILICON 2SC458C
Q607R	23282822	TR SILICON 2SC458C

PRODUCT SAFETY NOTE: Components marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully, the Service Manual.

SYMBOL NO.	PART NO.	DESCRIPTION
Q608L	23282822	TR SILICON 2SC458C
Q608R	23282822	TR SILICON 2SC458C
Q609L	2326871	TR DTC124ES
Q609R	2326871	TR DTC124ES
Q610L	2326871	TR DTC124ES
Q610R	2326871	TR DTC124ES
Q611L	2326871	TR DTC124ES
Q611R	2326871	TR DTC124ES
Q612L	2326871	TR DTC124ES
Q612R	2326871	TR DTC124ES
Q613L	2326871	TR DTC124ES
Q613R	2326871	TR DTC124ES
Q614L	2315422	TR 2SD1468STD (R)
Q614R	2315422	TR 2SD1468STD (R)
Q615	2326871	TR DTC124ES
Q616	23280832	TR 2SA844E SI 200MHZ 300MW
Q617	2324362	TR 2SA1129(K)
D602	2398921	DI 1N4531T
D603	2398921	DI 1N4531T
D604	2398921	DI 1N4531T
D605	2398921	DI 1N4531T
D606	2398921	DI 1N4531T
D607	2398921	DI 1N4531T
D608	2398921	DI 1N4531T
D609	2398921	DI 1N4531T
D611	2398921	DI 1N4531T
D612	2398921	DI 1N4531T
D751	2398921	DI 1N4531T
D752	2398921	DI 1N4531T
D753	2398921	DI 1N4531T
D754	2398921	DI 1N4531T
D755	2398921	DI 1N4531T
D756	2398921	DI 1N4531T
D757	2398921	DI 1N4531T
D758	2398921	DI 1N4531T
D759	2398921	DI 1N4531T
D760	2398921	DI 1N4531T
D761	2398921	DI 1N4531T
D762	2398921	DI 1N4531T
D763	2398921	DI 1N4531T [except E,EBS,EZ]
ZD602	2331785	DIODE-ZENER HZ4(B2)
ZD603	2331815	ZD HZ7 (B2)
ZD604	2331798	ZD HZ5C2
ZD605	2331792	ZD HZ5A2
ZD606	2331782	ZD HZ-4 A2 SI
ZD751	23375272	DIODE HZ9C1 1MHZ 400MW
FL751	2482251	FLUORESCENCE DISPLAY TUBE (HCPS)
LED601	2397314	LED RLL20503PD-R15(S)
L601	2122239	LA AXIAL COIL 10 MICROH
S751	2634341	TACT SWITCH
S752	2634341	TACT SWITCH
S753	2634341	TACT SWITCH
S754	2634341	TACT SWITCH
S755	2634341	TACT SWITCH
S756	2634341	TACT SWITCH
S757	2634341	TACT SWITCH
S758	2634341	TACT SWITCH
S759	2634341	TACT SWITCH
S760	2634341	TACT SWITCH
S761	2634341	TACT SWITCH
S762	2634341	TACT SWITCH
S763	2634341	TACT SWITCH
S764	2634341	TACT SWITCH
S765	2634341	TACT SWITCH
S766	2634341	TACT SWITCH
S767	2634341	TACT SWITCH
J601	2695011	MIC JACK (HCPS)
P601	2998985	13P FG CONNECTOR (HCPS)
P602	2998984	7P FG CONNECTOR (HCPS)
X601	2168881	CERAMIC OSCILLATOR 33.868MHZ
X751	2168481	CERAMIC OSCILLATOR
X752	2168491	CRYSTAL OSCILLATOR 32.768KHZ

CABINET

SYMBOL NO.	PART NO.	DESCRIPTION
1	3204841	FRONT PANEL SASS (HCPS) [except W,WUN,WAU]
	3204842	FRONT PANEL SASS (HCPS) [for W,WUN,WAU]
2	8411641	FELT (HCPS)
3	3821911	MAGAZINE DOOR (HCPS)
4	3204821	CD TRAY PANEL (HCPS)
5	3273741	POWER BUTTON (HCPS)
6	3273752	BUTTON (HCPS)
7	3273821	TUNER BUTTON (HCPS)
8	3273831	CHANGER BUTTON (HCPS)
9	3273771	MIC KNOB (HCPS)
10	3335861	DOOR SPRING (HCPS)
11	3471651	TOP COVER (HCPS)
12	3471731	REAR PLATE ASSY [for UC]
12	TS00027	REAR PLATE ASSY [for E,EBS,EZ]
12	TS00028	REAR PLATE ASSY [for W,WUN,WAU]
13	3831361	FOOT (HCPS)
14	8411652	FOOT RUBBER (HCPS)
15	3372551	TN-2500-110 CD CHANGER MECHA ASSY (HCPS)
16	8671406	DT BIND HEAD SCREW,(3X6)
17	8679406	DT BIND SCREW 3X6
18	8691410	BT SCREW,(3X10)
19	8691410	BT SCREW,(3X10)
20	8699410	BT BIND HEAD SCREW,(3X10)
21	8815116	WASHER
22	8671408	DT BIND HEAD SCREW (3X8)
23	3874121	FL HOLDER (HCPS)

CD CHENGER MECHA

SYMBOL NO.	PART NO.	DESCRIPTION
1	3378842	GUIDE BOSS (HCPS)
2	3378843	CONNECTOR A ASSY (HCPS)
3	3378844	CONNECTOR D ASSY (HCPS)

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SYMBOL NO.	PART NO.	DESCRIPTION
4	3378845	CONNECTOR P ASSY (HCPS)
5	3378846	ELEVATION ARM A ASSY (HCPS)
6	3378847	ELEVATION SIDE ARM B ASSY (HCPS)
7	3378848	ELEVATION FRONT ARM A ASSY (HCPS)
8	3378849	CAM LEVER SPRING (HCPS)
9	3378851	LIFT CAM (HCPS)
10	3378853	ELEVATION GEAR B (HCPS)
11	3378854	ELEVATION GEAR C (HCPS)
12	3378855	ELEVATION GEAR D (HCPS)
13	3378856	REAF SWITCH (HCPS)
14	3378857	CAM LEVER (HCPS)
15	3378858	GUIDE BASE (HCPS)
16	3378859	ELEVATION SLIDE LEVER (HCPS)
17	3378861	ELEVATION SLIDE LEVER SPRING (HCPS)
18	3378862	M GUIDE (L) (HCPS)
19	3378863	M GUIDE (R) (HCPS)
20	3378864	GUIDE COVER (HCPS)
21	3378865	TRAY STOPPER (HCPS)
22	3378866	RELEASE LEVER (HCPS)
23	3378868	LOCK LEVER (HCPS)
24	3378869	E KICK LEVER SPRING (HCPS)
25	3378871	RELEASE LEVER SPRING (HCPS)
26	3378873	PUSH SWITCH (HCPS)
27	3378875	HOOK SLIDE GEAR (HCPS)
28	3378877	FLOATING RUBBER (HCPS)
29	3378878	FLOATING SPRING B (HCPS)
30	3378879	FLOATING SCREW (HCPS)
31	3378932	FLOATING SPRING (HCPS)
32	3378881	FEED BELT (HCPS) (ETHYLENE PROPYLENE)SQUARE FAI14.4(1.1X1.1)
33	3378883	SHAFT HOLDER A (HCPS)
34	3378884	FEED SCREW ASSY (HCPS)
35	3378887	FEED NUT SPRING (HCPS)
36	3378888	PICK UP (HCPS)
37	3378889	RAIL BASE ASSY (HCPS)
38	3378891	RAIL (L) (HCPS)
39	3378892	RAIL (R) (HCPS)
40	3378893	HOOK LEVER (HCPS)
41	3378894	LP BRACKET ASSY (HCPS)
42	3378895	MG HOLDER ASSY (HCPS)
43	3378897	SHAFT HOLDER B (HCPS)
44	3378898	DISC MOTOR ASSY (WITH TURN TABLE) (HCPS)
45	3378901	P RAIL BASE ASSY (HCPS)
46	3378902	STOPPER SPRING (HCPS)
47	3378903	STOPPER (HCPS)
48	3378904	P BELT (HCPS) (POLYURETHANE) SQUARE FAI 57.4 (1.7X1.7)
49	3378905	P GEAR A (HCPS)
50	3378906	P GEAR B (HCPS)
51	3378907	FE GEAR C (HCPS)
52	3378908	FE GEAR D (HCPS)
53	3378909	FE GEAR E (HCPS)
54	3378911	FE GEAR D SPRING (HCPS)
55	3378912	FE GEAR E SPRING (HCPS)

SYMBOL NO.	PART NO.	DESCRIPTION
56	3378913	SWITCH ACTUATOR (HCPS)
57	3378915	TRAY (HCPS)
58	3378917	ELEVATION MOTOR ASSY (HCPS)
59	3378918	FEED MOTOR ASSY (HCPS)
60	3378919	CAM SLIDER ASSY (HCPS)
61	3378933	4P CONNECTOR (HCPS)
62	3378934	10P CONNECTOR (HCPS)
63	3378921	CAMERA PAN 1.7X2.2
64	3378922	2X6 TAPPING SCREW (HCPS)
65	3378923	2X3 TAPPING SCREW (HCPS)
66	3378924	2X4 TAPPING SCREW (HCPS)
67	3378925	2X3 TAPPING SCREW (HCPS)
68	3378926	2X3 TAMS SCREW (HCPS)
69	3378927	3X4 TAMS SCREW (HCPS)
70	3375472	2X3 TAPPING SCREW (HCPS)
71	3375501	2X5 TAPPING SCREW (HCPS)
72	3375522	2X4 TAPPING SCREW (HCPS)
73	3375503	HL WASHER CUT 2.1X5X0.4
74	3378928	POLY WASHER 3.1X8.5X0.13 (HCPS)
75	3378929	POLY WASHER 2.6X6X0.5 (HCPS)
76	3378931	E RING (HCPS)
		ACCESSORY
		AX-12
	2977931	7P FG CABLE (HCPS)
	2977941	13P FG CABLE (HCPS)
	2573945	REMOTE CONTROL TRANSMITTER (RB-AX15) (HCPS)
	2759341	AM LOOP ANTENNA (HCPS)
	2757528	FM ANTENNA (for UC,WAU)
		AX-C12
	2977931	7P FG CABLE (HCPS)
	2977941	13P FG CABLE (HCPS)
	2573946	REMOTE CONTROL TRANSMITTER (RB-AXC15) (HCPS)
	2759341	AM LOOP ANTENNA (HCPS)
	2757528	FM ANTENNA (for UC,WAU)
		AX-15
	2977931	7P FG CABLE (HCPS)
	2977941	13P FG CABLE (HCPS)
	2573945	REMOTE CONTROL TRANSMITTER (RB-AX15) (HCPS)
	2759341	AM LOOP ANTENNA (HCPS)
	2757528	FM ANTENNA (for UC,WAU)
		AX-C15
	2977931	7P FG CABLE (HCPS)
	2977941	13P FG CABLE (HCPS)
	2573946	REMOTE CONTROL TRANSMITTER (RB-AXC15) (HCPS)
	2759341	AM LOOP ANTENNA (HCPS)
	2757528	FM ANTENNA (for UC,WAU)

PRODUCT SAFETY NOTE: Components marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully, the Service Manual.

SYMBOL NO.	PART NO.	DESCRIPTION
		HS-AX12
1	505-LAX-12-CKD	CABINET (L)
	505-RAX-12-CKD	CABINET (R)
2	401-LAX-12-CKD	FRONT PANEL (L)
	401-RAX-12-CKD	FRONT PANEL (R)
3	903-LAX-15-CKD	CLOTH FRAME(L)
	903-RAX 15-CKD	CLOTH FRAME(R)
4	W543366HCX	25A-21 SPK .5-1/4
5	T20108NPW13K-20	SPK .2
6	300-B2351400	WOOD SCREW M3.5 x 14 BLK BIND
	190-AX-12	CORD ASSY
		HS-AX15
1	505-LAX-15-CKD	CABINET (L)
	505-RAX-15-CKD	CABINET (R)
2	401-LAX-15-CKD	FRONT PANEL (L)
	401-RAX-15-CKD	FRONT PANEL (R)
3	903-LAX-15-CKD	CLOTH FRAME(L)
	903-RAX 15-CKD	CLOTH FRAME(R)
4	W54536NCX25A-20	25A-21 SPK .5-1/4
5	T20108NPW13K-20	SPK .2
6	401-AX-15	PIEZO TWEETER ASSY
7	300-B2351400	WOOD SCREW M3.5 x 14 BLK BIND
	617-N1520	SUBSIDIARY SPK-CORD
	190-AX-12	CORD ASSY

SYSMBOL NO.	PART NO.	DESCRIPTION